Volume 4, Number 6 $3.50

Scholastic's Magazine for Today's Elementary Classrooms

TEACHING and computers™

***************3-DIGIT 038
0033309441 1204 8706 NOV87 GAA

hed by Scholastic Inc.

March 1987

"WE'RE ON A LEARNING STREAK WITH ROCKS!"

HOW ONE SCHOOL USES THE COMPUTER TO INVESTIGATE ROCKS AND MINERALS

Plus:
Mysterious Logo Play
Math Spreadsheets

Outstanding Salesman Award
Why didn't we see much of
Owen Farrell
this year? Because he was busy selling everywhere
12/7/87
WORLD'S BEST GRANDPARENTS
To the best story teller in the world and the best chocolate chip cookie maker
Grandma
July 23, 1987
Practice Makes Perfect Award
Sara Woo
September 1, 1987

Certificate Maker.™

Hundreds of different strokes for different folks.

Reward special accomplishments, serious or silly, with personalized certificates you create yourself in minutes.

The original Certificate Maker™ and new Certificate Library™ Volume 1 software could be the best thing that's ever happened to self-esteem.

Because they help you give people the strokes they deserve for their accomplishments at home, at school and at work.

You simply choose a certificate that fits the occasion and the mood, select a border, type in your message, add a date and signature...then print. It's that quick and easy.

You can even create a name file and automatically personalize certificates for everyone in your class or club!

Start with Certificate Maker software, a best-seller.

Certificate Maker includes over 200 professionally designed certificates covering sports, families, kids, religion, academic achievement, business and many other categories along with three dozen foil seals and bright, colorful stickers.

Now Available For:
Apple II+, IIe, IIc; IBM PC, XT, AT;
Commodore 64/128; Macintosh

Build your award library with our new Certificate Library Volume 1.

Certificate Library Volume 1 works together with Certificate Maker, and adds over 100 bright, new ways to give people the strokes they've earned at home, school, or work. All-new, all-fun graphics, plus dozens of foil seals and colorful stickers.

SPRINGBOARD
Certificate Maker
SPRINGBOARD
Certificate Library
Volume 1

For accomplishments at home, school, or work, we have a Certificate, Award, Diploma, or License to make it official—and fun!

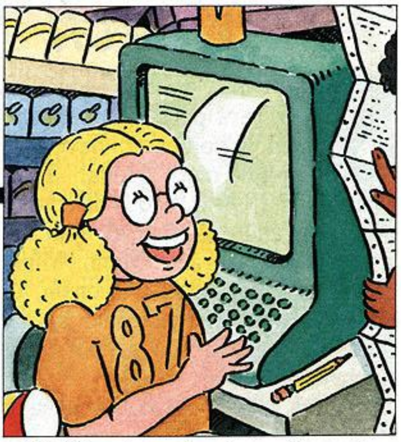
SPRINGBOARD™

Springboard Software, Inc. • 7808 Creekridge Circle • Minneapolis, MN 55435 • (612) 944-3915

Circle 11 on Product Info Card.

TEACHING and computers®

Published by Scholastic Inc.
March 1987
Vol.4, Issue 6



33 *There's no business like soda business!*

16 *Looking for clues. . .*

FEATURES:

10 **The Rockhound Files**
Get in on the ground floor of modern science instruction — help your class set up a data file on rocks! Kids can use it to learn geology concepts as well as to develop skill in scientific observation and evaluation.

16 **The Mystery of Megan Watt**
What has happened to computer whiz Megan Watt? The COMPUTER knows! Or does it? Find out when your class performs this humorous two-act play.

33 **Taking Care of Business**
If you give kids the business (the school's soda machine business, that is) — plus spreadsheet, word processing, and graphing software — big gains will result.

CLASSROOM MATERIALS:

21 ***T&C's* Poster**
"Three Types of Software Disks."

21 ***T&C's* Poster Worksheets**
Four reproducible worksheets on different kinds of software. Worksheet answers are on page 45.

38 **Writer's Corner**
Word processing task cards that teach young writers about plot structure.

COLUMNS AND DEPARTMENTS:

3 **Update**
News for computer-using teachers.

4 **Classroom Happenings**
What's happening in computer classrooms.

6 **Bookshelf**
Books that provide computer literacy activities.

42 **Micro Ideas**
Quick computer tips and activities.

46 **First Steps**
Activities for introducing the special function keys to primary grade children.

48 **Software Showcase**
Software selected for teachers, by teachers.

COVER ILLUSTRATION BY: DAVID ANSON RUSSO

TEACHING AND COMPUTERS® (ISSN 0738-6087) is published eight times during the year; monthly September through April, bimonthly November/December and May/June by Scholastic Inc., 730 Broadway, New York, NY 10003-9538 for $19.95 per year, $11.95 for five or more subscriptions to the same address. Single copy, $3.50. (For Canadian pricing, write our Canadian office, address below.) Second-class postage paid at Monroe, OH 45050-2700 and at additional offices. POSTMASTERS: Send notice of address changes to Office of Publication, TEACHING AND COMPUTERS®, 351 Garver Rd., Box 2700, Monroe, OH 45050-9998. Address subscription correspondence to TEACHING AND COMPUTERS®, P.O. Box 2040, Mahopac, NY 10541. Canadian address: Scholastic-TAB Publications, Ltd., Richmond Hill, Ontario L4C 3G5; in the United Kingdom: Scholastic Publications, Ltd., Westfield Rd., Southam, Leamington Spa, Warwickshire, England DV330JH; in Australia: Ashton Scholastic Pty., Ltd., P.O. Box 579, Gosford, N.S.W. 2250, Australia; and in New Zealand: Ashton Scholastic Ltd., 7-11 Fairfax Ave., Penrose, Auckland 6, New Zealand. Available on microfilm through Xerox University Microfilms, Inc., 300 N. Zeeb Rd., Ann Arbor, MI 48106. Also available on microfiche through Bell & Howell Micro Photo Division, Old Mansfield Rd., Wooster, OH 44691. Printed in U.S.A. Copyright © 1987 by Scholastic Inc. All Rights Reserved. Member, Audit Bureau of Circulations. Permission is granted to make machine copies of material in this issue for classroom use only. **Permission to reproduce material in this issue, in whole or part, in any form or format, for all other uses, must be requested from the publisher.**

FROM THE EDITOR

March Highlights

Soda cans and spreadsheets? They're a perfect combination when it comes to developing real-life math skills! That's what teacher Greg Woods discovered when he and his special education students at Horace Mann Middle School in West Allis, Wisconsin, decided to use an electronic spreadsheet to manage the school's soda machine business.

Though Greg's students have instructional levels that range from second through fifth grade, Greg helped his students set up a spreadsheet format that everyone was able to use.

The bottom line on this project? The school got an efficiently run soda business and Greg's students learned the mathematical basics of operating a business.

Greg tells how he turned his soda business novices into soda magnates — and how you can do the same with your students — in **Taking Care of Business**, page 33.

You may not realize it, but chances are good that under your classroom roof sit several bonified *rockhounds*. A rockhound is someone who collects, investigates, lives and breathes rocks.

Given the opportunity — and an electronic rock data file — just about any child will become a rockhound. There's something about the world of rocks that fascinates kids. This month's cover story, **The Rockhound Files**, page 10, tells how you can take advantage of this fascination with rocks to help children learn important science and computing skills.

The article provides a teaching unit in which students use hands-on research to collect rock data. They then design a data file format for entering and storing their data on the computer. Once kids have entered their data into the data file, they perform several data retrieval exercises that teach them how to evaluate their research. By the end of the unit, students will understand how to use a data base management system as well as how to identify many commmon rocks. But best of all, they will have developed skill in scientific observation, measurement, classification, and evaluation.

If you are looking for a fresh new classroom play, we have just the script for you. It's entitled **The Mystery of Megan Watt**, page 16, and it stars none other than your classroom computer! Yes, that's correct. In this play, with the help of a Logo program, a real computer "delivers" lines on its monitor.

Superwoman, Batman, Robin, Sherlock Holmes, and Dr. Watson also make appearances in this two-act mystery. It's a play that's bound to be a crowd pleaser.

Other excellent material in this month's issue include four task cards that teach kids how to write stories with exciting plots and a poster (second in a series of two) on software.

Mary Dalheim

Could the T&C *staff use its own soda-business spreadsheet? Looks like the editors drink enough soda to maintain a profitable enterprise! Left to right: Mickey Revenaugh, Jackie Glasthal, Mary Dalheim, Kris Meyer.*

TEACHING and computers

PUBLISHED BY SCHOLASTIC INC.
Maurice R. Robinson,
Founder of Scholastic Inc., 1895-1982

EDITORIAL

Offices: 730 Broadway, New York, NY 10003
Editor: Mary Dalheim
Senior Editor: Mickey Revenaugh
Associate Editor: Jackie Glasthal
Production Editor: Kristan Meyer
Software Review Editor: Rose Trivisonno
Contributing Editors:
Sandra Markle, Shiela Swett
Art Director: Shelley LaRoche

Editorial Director, *Teaching and Computers; Electronic Learning:* Jack L. Roberts

PUBLISHING/ADVERTISING

Associate Publisher: Robert Burroughs
New York Office: 730 Broadway, New York, NY 10003, (212) 505-3486
Eastern Representative: Lewis Edge and Associates, Inc. 842-A State Road, Princeton, NJ 08540, (609) 683-7900
Midwest Manager: Ray Barnes
Midwestern Representative: Brian Barnhart
Chicago Office: 400 N. Michigan Ave., Chicago, IL 60611, (312) 467-6888
West Coast Office: John Sabo, John Sabo Associates, P.O. Box 3085, Redondo Beach, CA 90277, (213) 379-8455
Classified Sales Representative:
Philip Ehrlich
Advertising Production Coordinator:
Renee Torres
Special Projects Manager:
Corona Gray-Moore, (212) 505-3485

SCHOLASTIC MAGAZINES FOR TEACHERS GROUP

Publisher: Shirrel Rhoades
Director, Product Production:
J. G. Brownell
Manager, Production Operations:
Gay Siccardi
Business Manager: Robert Bellone
Circulation Director: Terry Perkins
Circulation Promotion Director:
Irv Cohn
Head Promotion Design Director:
Dale Moyer
Public Relations Director:
Jeanne Krier
Systems Manager: David Hendrickson
Production Manager: Richard Walsh
Technical Consultant: Lance Paavola
Chief Librarian: Lucy Evankow
Permissions: Nancy Giraldo

TEACHING AND COMPUTERS ADVISORS

ADVISORY BOARD: Ann Dana, Microcomputer Consultant for School District 181 in Hinsdale, IL ● Beth Lazerick, Computer Coordinator, The Dalton School, New York, NY ● Tom Lough, Editor, *National Logo Exchange*, Charlottesville, VA ● Eydie Sloane, Computer Consultant for Special Populations for Dade County Public Schools, FL ● Steve Tipps, West Professor of Education, Midwestern State University, Wichita Falls, TX.

PROGRAMMING CONSULTANTS: William Kraus, Emile Gardette.

UPDATE

NEWS FOR COMPUTER-USING TEACHERS

APPLE COMPUTER CLUB ANNUAL COMPETITION

Student members and adult advisors of Apple Computer Clubs are invited to enter Apple's fourth annual Computer Club Merit Competition. Participants are asked to submit original ideas on useful applications for Apple computers.

Submissions are accepted in four categories: Community Service, BASIC programming, Computers in the Curriculum, and Judges' Choice. Winners are selected on three levels: kindergarten through fifth, sixth through eighth, and ninth through twelfth grade. The deadline for contest submissions is April 15, 1987.

Grand prize winners will be awarded an all-expense paid trip to Washington, D.C. Additional prizes will be awarded to semifinalists and runners-up. Names of all contest winners will be announced in mid-May.

For the official contest rules or further information on how to start an Apple Computer Club, write to: Apple Computer Clubs International, 175 Middlesex Turnpike, Bedford, MA 01730; 800/343-1425.

STORY WRITING CONTEST

If you own a piece of software called *Story Tree*, you can cultivate students' imaginations and writing skills by participating in the third annual *Story Tree* Writing Contest. (*Story Tree*, published by Scholastic Inc., is a writing tool that helps kids organize and write interactive adventure, mystery, and other types of stories.)

Children enter the contest by submitting a printout of a story they have written with the help of *Story Tree*. Prizes for the contest will be awarded to the best written stories in two divisions: elementary (grades four through six) and junior high (grades seven through nine). The author of the grand prize-winning story in each of these divisions will receive an Apple computer. Each of the two winning authors' teachers will also receive an Apple for classroom use. An additional 10 stories will be selected for honorable mention in each division. These winners will each receive $100 worth of Scholastic software.

Entry deadline is April 30, 1987. Winners will be announced in May. For more details about entering the contest, write to: Scholastic Software, *Story Tree* Contest, Dept. BB, 730 Broadway, New York, NY 10003.

NEWSLETTER FOR "APPLEWORKS" USERS

Home and School Works is a new educational newsletter that promotes the use of *AppleWorks* software in both schools and homes. It is the result of efforts by teachers, students, parents, and home users of *AppleWorks* software.

Articles include tips on tapping the power of *AppleWorks*; educational applications of the program; and reviews of hardware, software, and books that support *AppleWorks* software.

A one-year subscription (10 issues) is available for $19.95. A sample issue is $2.50. School purchase orders are accepted.

For more information, write to: Dave Chesebrough, Editor, *H&S Works Newsletter*, P.O. Box 72, Leetsdale, PA 15056.
(Circle 21 on Product Info Card.)

THIRD EDITION OF "BANK STREET WRITER" RELEASED

The Bank Street Writer III, a new and more powerful edition of the popular *Bank Street Writer* word processing program, has just been released. The new program takes advantage of the increased potential of Apple and IBM (and other MS/DOS) 128K microcomputers now installed in many classrooms.

Key features of *The Bank Street Writer III* are a fully-integrated 60,000-word spelling checker, a 50,000-synonym thesaurus, and a "Big Print" disk for the Apple edition, which allows early learners to write in a 20-column mode. The Scholastic edition of the program also offers on-screen, nonerasable prompts for teachers who wish to customize writing activities for students.

"Trade-ups" of *The Bank Street Writer* and *The Bank Street Writer II* for the new version of the program are available at $49.95 (for the Apple version) and $62.45 (IBM). The IBM version also runs on Tandy and other MS/DOS microcomputers.

The Bank Street Writer III sells for $79.95 (Apple version) and $99.95 (IBM). It is also available in lab packs that contain five sets of disks and a user's handbook for $129.95 (Apple version) or $159.95 (IBM).

For more information, contact Scholastic Software, P.O. Box 7501, 2931 East McCarty St., Jefferson City, MO 65102; 800/325-6149.
(Circle 22 on Product Info Card.)

VIDEODISC RESOURCES

Two new resources — an educational newsletter and a videodisc directory — are available to teachers who use videodisc-based courseware in their classrooms. Both are published by Systems Impact, Inc.

Teaching with Videodiscs, a bimonthly newsletter, includes product announcements and reviews, articles on new developments in videodisc technology, insights on how some schools are using videodisc programs, and a forum for questions and comments from educators. Subscribers also receive special topic papers on subjects related to interactive videodisc technology.

The second resource, *Educational Videodisc Directory* (published semiannually), is a 16-page booklet that lists more than 60 educational videodisc titles arranged according to subject. The educational level, format, price, publisher, number of videodiscs, and content description of each package is given.

A free subscription to *Teaching with Videodiscs* magazine is included with the purchase of any software from the Systems Impact's Core Concepts in Science and Mathematics series. It is also available to noncustomers for $25 per year. The *Educational Videodisc Directory* is included free of charge with subscriptions to the newsletter. It is available to nonsubscribers for $5 per copy.

For more information on Systems Impact products, write or call Systems Impact, Inc., 4400 MacArthur Blvd., N.W., Suite 203, Washington, D.C. 20007; 202/342-9369 or toll free 800/822-INFO.
(Circle 23 on Product Info Card.) ■

CLASSROOM HAPPENINGS

WHAT'S HAPPENING IN COMPUTER CLASSROOMS

Four hundred twenty students and 12 teachers at the Thurston Middle School in Laguna Beach, CA, combined efforts to make the world's longest computerized banner.

KIDS CREATE "WORLD'S LARGEST BANNER"

Students at Thurston Middle School in Laguna Beach, California, like to do everything big. That's why they created the world's largest banner — it was 1.7 miles long! The banner announced an upcoming school fund-raiser known as the Laguna Beach 10K Race. The banner was made with the help of six computers and a graphics program called *The Print Shop* (published by Broderbund).

By taking turns during the school day, as well as putting in extra hours on the weekend, it took 420 11- to 14-year-olds and 12 teachers two weeks to complete the project. The banner not only announced the race, it also listed the names of the students who worked on it and the names of 75 companies that helped to sponsor the race.

During the two-week period in which the banner was being completed, the morning announcements at Thurston began with an update on the banner's length. The information was also posted daily on bulletin boards throughout the school.

When the banner was finally done, the school received a proclamation signed by Laguna Beach's mayor, which acknowledged that Thurston students had created the largest banner in the world. Now the school is trying to qualify the banner for *The Guinness Book of World Records.* They have also sent a copy of the banner to President Ronald Reagan, who has often stressed the importance of industries "adopting" education projects.

WEATHER TRACKERS

What was the coldest day in Massachusetts last October? Did it snow on Halloween?

Linda Ferullo and her second graders at the School of the Future in Cambridge, Massachusetts, can tell you. With the aid of a thermometer hung outside their classroom window, children tracked the temperature each day for the entire month. They also looked up additional weather information in a daily newspaper. They entered the facts onto a "weather information chart" bulletin board, as well as onto worksheets. The compiled data, which covered precipitation, humidity, temperature, and wind factors, was then transferred into a classroom data base.

During the month, Linda and her students also wrote letters to friends and family in other parts of the country. "What was the weather like for you today?" they asked. When postcards and pictures came back with descriptions of the weather in other areas of the United States, Linda's students checked their data base to see how the climates compared on specific dates. From the responses they received they learned a lot. They found out that it can be warm in Wyoming, but bitter cold in Boston at the same time.

POP MUSIC WITH A LOGO "TWIST"

Kids from Texas Christian University's Summer Gifted Institute know a lot about music, art, math, computer literacy, and Logo. Much of this knowledge, says their former instructor, Graydon Dawson, was the result of just one extended project: the making of Logo rock videos.

Graydon challenged the 12- to 15-year-olds he was working with to create their own rock videos with the help of *Super Logo* (Tandy/Radio Shack) software and the Radio Shack Color Computer.

"In the beginning, these kids didn't know much about Logo, but once they were given this challenge," Graydon says, "they just couldn't learn Logo commands fast enough. Even after working on the videos two hours a day for two straight weeks, kids were always ready and willing to come on back for more."

To complete the project, Graydon taught his students how *Super Logo* allows users to HATCH multiple turtles onto the computer screen. (Other versions of Logo, including *LogoWriter,* also allow users to use more than one Logo turtle at a time.) Then they learned the appropriate syntax to produce four turtles operating independently of one another. Finally, when they were comfortable using all four turtles at once, students were asked to bring to class a cassette recording of their favorite popular tune.

Using stop watches and story board-like drawings, students (each one working with a partner) wrote Logo programs that synchronized the beat of a song to Logo movements and color changes.

"It's exciting to see a cartoon-like Michael Jackson moon dance to one of his songs, or to see colorful geometric designs unfold to the beat of a top-10 tune," Graydon says.

If you would like more information on how to use Logo to create rock videos, contact Graydon Dawson, Electronic Data Systems, c/o Corporate Training Services, 5236 Tennyson Parkway, Plano, TX 75024.

CLASSROOM HAPPENINGS

COMPUTER RECESS

When elementary school students volunteer to give up recess for extra work in subjects like reading and math, there's a good chance something special is going on.

At Washington Elementary School in Olathe, Kansas, something special *is* going on. It's called computer recess, and it was designed by Nancy Tomlinson, reading specialist at the school. Here's how it works: Every day, each homeroom teacher at Washington selects one student to attend computer lab during the class's recess. While at the lab, students can work on school or any other computer-related projects.

Recess was the only time in the school day, Nancy realized, when the school's five Apple II computers sat idle. "But not anymore," she says. "Now we're using them every minute that we can."

Most students at Washington have the opportunity to attend computer recess approximately once a month. Some homeroom teachers offer it as a reward for good behavior; others go through their attendance sheets alphabetically to ensure equal access.

The atmosphere of computer recess is more relaxed than during regular computer lab classes. "We don't ask for absolute quiet," Nancy explains. "After all, students *are* giving up their regular recess time for this."

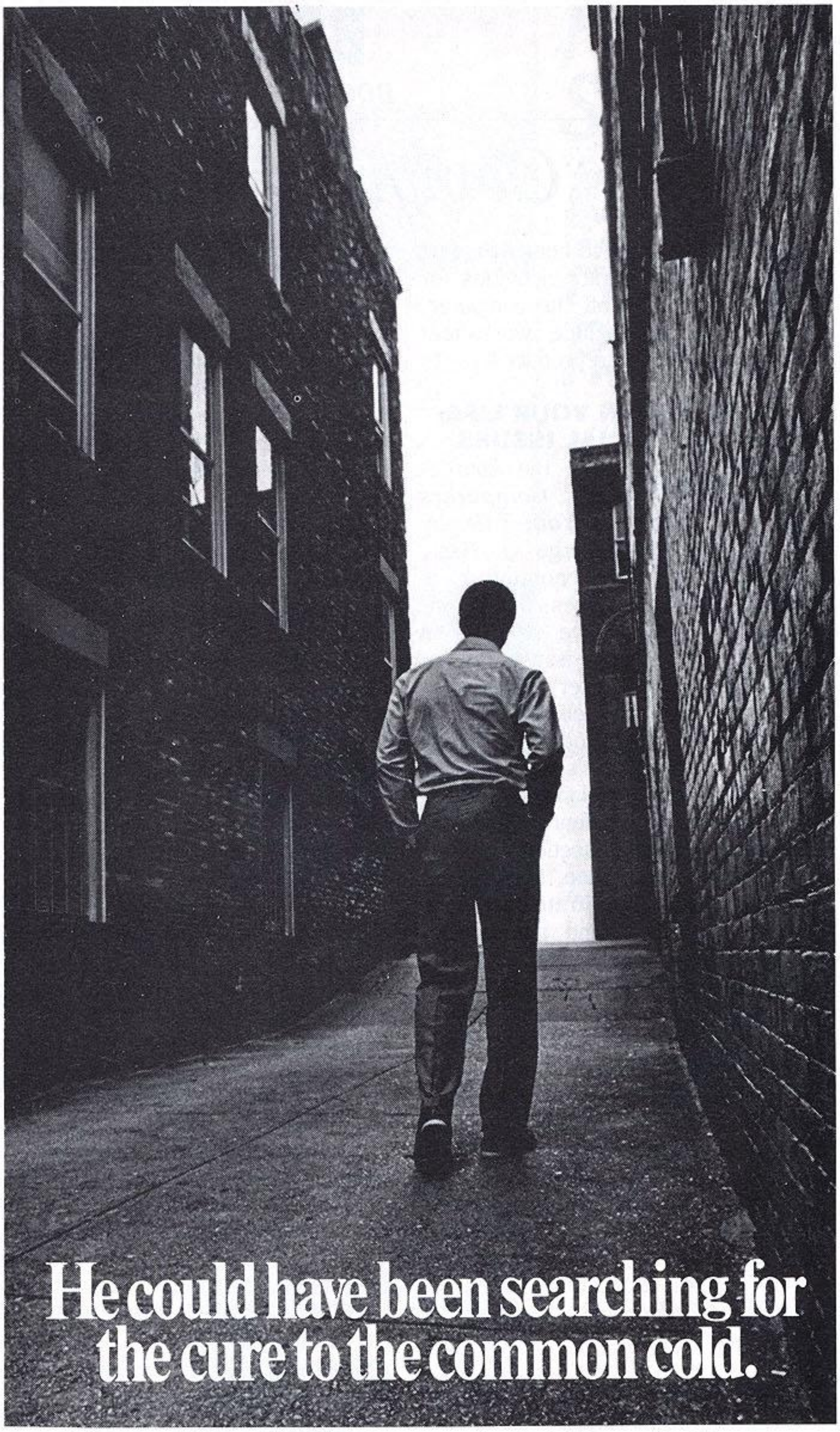
Mary-Lane Kamberg
Olathe, KS

BE A REPORTER!

Come on, computer-using LD teachers. We know you're out there! What exciting computer projects have *your* students been working on lately? We'd like to tell our readers about them in this column.

Send a brief description of your project along with any photos you can spare. We'll pay \$25 to \$50 if we publish your story. Write: "Classroom Happenings," *Teaching and Computers*, 730 Broadway, New York, NY 10003. ■

BY JACKIE GLASTHAL


He could have been searching for the cure to the common cold.

There are kids out there who have the desire and the brains to go to college. What they don't have is the money. So they don't go. And that is nothing less than a crime.

Which is why the United Negro College Fund exists. By keeping tuitions down at its 43 predominantly black colleges, the Fund gives a chance to thousands of these deserving students. A chance they would not have gotten otherwise.

So please, send your check to the United Negro College Fund, 500 East 62nd Street, New York, New York 10021. Who knows, it may be the check that will clear up your next cold.

Give to the United Negro College Fund.
A mind is a terrible thing to waste.

BOOKSHELF

BOOKS FOR COMPUTER USERS

Computer Activity Books

The following five books suggest computer literacy activities for both on and off the computer. All books include worksheet pages that may be reproduced.

COMPUTERS IN YOUR LIFE: FACE THE SOCIAL ISSUES

In the sourcebook, ***Computers in Your Life***, by George G. Bear, no computer is necessary to involve students in the issues of computer ethics. Student involvement is elicited through the book's 95 reproducible worksheets. Each of Bear's five chapters is divided into a section for teachers and another for students. The very thorough teachers' sections provide background information, learning objectives, teaching strategies, suggested readings, and answers to questions posed in the corresponding students' section of the book. The students' pages involve individuals or small groups in computer ethics through case studies, moral dilemmas, role-playing, and values clarification exercises. *Computers in Your Life* is appropriate for both computer and social studies classes, grades six through eight. It is also an excellent resource for teachers of gifted students in grades four through six. Price: *$18*. Contact: *J. Weston Walch, P.O. Box 658, Portland, ME 04104-0658.*

PLAY TOGETHER LEARN TOGETHER

Parents and teachers of children ages four through seven will be happy to know about ***Play Together Learn Together.*** In this book, reading readiness and computer literacy are taught through games, puzzles, and coloring pages. Additional activities are supplied on an accompanying diskette. Topics include counting, knowing the keyboard and screen, designing patterns, above/below and left/right discrimination, and BASIC commands. The book is well indexed, which makes it a good resource for the primary classroom as well as the home. For owners of Apple II series computers only. Price: *$24.95 includes diskette.* Contact: *Grolier Electronic Publishing, Inc., Sherman Turnpike, Danbury, CT 06816.*

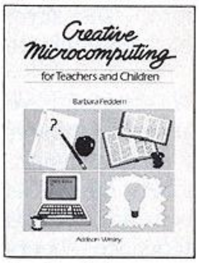
CLASSROOM COMPUTER COMPANION

Classroom Computer Companion by Linda Schwartz is a collection of almost 100 blackline masters that are related to classroom computing. Included are reproducible task cards, glossary pages, certificates, scheduling charts, worksheets, bulletin board activities, and more. The masters are adaptable for use with any grade level and with any brand of computer. The book is divided into eight well-organized chapters for easy use, and there is an answer key at the end of the book. Price: *$9.95.* Contact: *The Learning Works, Inc., P.O. Box 6187, Santa Barbara, CA 93160.*

OFF & RUNNING: THE COMPUTER OFFLINE ACTIVITIES BOOK

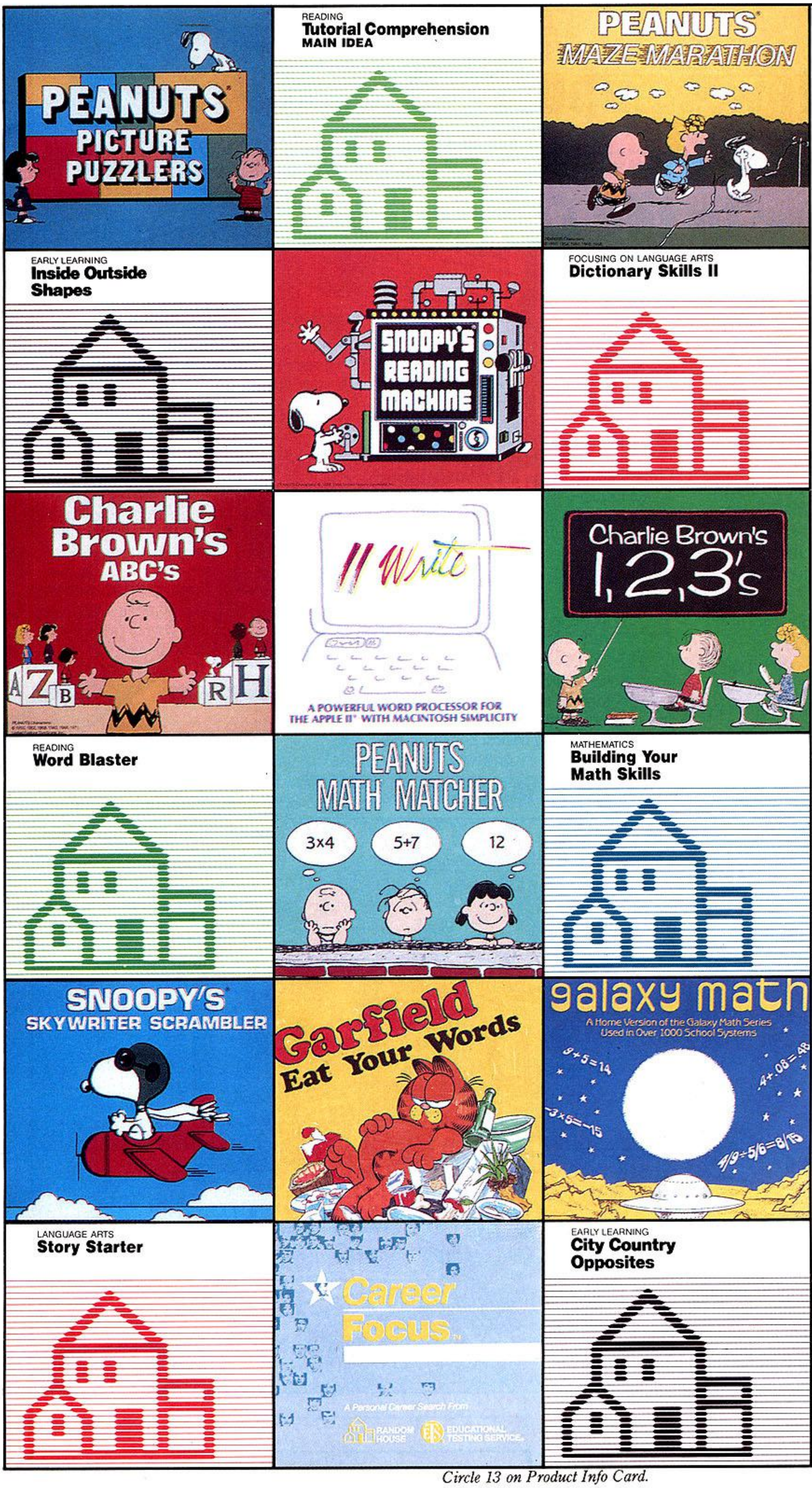
Tim Erickson's 145-page spiral-bound book ***Off & Running*** provides computer-related games and activities for all ages. Each of the activities are designed as off computer exercises. The concept of programming is demonstrated, for example, by having students break instructions into small steps and perform them in a logical sequence. Cooperation and equity are emphasized. Computer ethics and computer history are also taught. Tying the activities from one section to the next is the narrative of a 12-year-old boy named Chris. He explains how the activities were all originally tasks set for him over the summer by his Aunt Bebe. Some reproducible worksheets are included. Take heed of the advice given in the table of contents: Don't skip the Introduction! Price: *$12.50 plus $2 shipping.* Contact: *Kay Gilliland, Lawrence Hall of Science, University of California, Berkeley, CA 94720.*

CREATIVE MICROCOMPUTING FOR TEACHERS AND CHILDREN



Creative Microcomputing by Barbara Feddern is a compendium of computer literacy and programming activities designed for elementary and middle school students. Literacy activities range from those primary students can easily handle (collecting articles on how computers are used in various fields, for example), to more sophisticated literacy for intermediate students. The section on programming includes explanations of the commands PRINT, GOTO, INPUT, IF-THEN, FOR-NEXT, REM, READ-DATA, and PRINTTAB. Random numbers, graphics, subroutines and variables are also explained. The pages in the book are perforated and three-hole punched, which allows you to arrange them in a looseleaf binder in any order that you wish. The many blackline masters in the book include explanations of concepts as well as activities for children to complete. Price: *$18.60.* Contact: *Addison-Wesley Publishing Co., One Jacob Way, Reading, MA 01867.* ■

Candy Colborn is a media specialist at Cottonwood Creek Elementary School in Englewood, CO.


PEANUTS
PICTURE PUZZLERS
READING
Tutorial Comprehension
MAIN IDEA
PEANUTS
MAZE MARATHON
EARLY LEARNING
Inside Outside Shapes
SNOOPY'S READING MACHINE
FOCUSING ON LANGUAGE ARTS
Dictionary Skills II
Charlie Brown's ABC's
II Write
A POWERFUL WORD PROCESSOR FOR THE APPLE II WITH MACINTOSH SIMPLICITY
Charlie Brown's 1,2,3's
READING
Word Blaster
PEANUTS MATH MATCHER
3x4
5+7
12
MATHEMATICS
Building Your Math Skills
SNOOPY'S SKYWRITER SCRAMBLER
Garfield Eat Your Words
galaxy math
A Home Version of the Galaxy Math Series Used in Over 1000 School Systems
LANGUAGE ARTS
Story Starter
Career Focus
A Personal Career Search From
RANDOM HOUSE
EDUCATIONAL TESTING SERVICE
EARLY LEARNING
City Country Opposites

First-Class Software for First-Class Results

From one of the world's leading publishers comes quality programs for Apple, IBM, Commodore and Tandy Computers.

Random House Software presents educational programs featuring the most popular characters together with the finest curriculum software to provide the best return on your investment in computing. Change that computer corner into an educational and entertainment center for all ages.

Random House Software... All the Best from Our House.

RANDOM HOUSE

PEANUTS Characters: © United Feature Syndicate, Inc.
GARFIELD: © United Feature Syndicate, Inc.
All Rights Reserved.

Call now for information about our complete line of microcomputer software programs.
1-800-638-6460 ext. 5000.
In Alaska, call collect 0-301-848-1900.
In Maryland, call toll-free 1-800-492-0782.

Please send me your free microcomputer software catalog. (ISBN Order #676-98396-0)

School
Street
City State Zip
Attention

Mail to: Random House
School Division, 400 Hahn
Road, Department 9312C
Westminster, MD 21157

Circle 13 on Product Info Card.

Seven New Computer-Based Products To Help K-8 Teachers Use the Computer In the Curriculum.

Here, at last, are the classroom computer products that so many teachers have been asking for.

Products that will help you teach social studies, science, language arts, math–and not just computer skills.

Products packed with lessons that students can do on their own; others that you can complete in 15 or 20 minutes; still others that knit seamlessly into your existing curriculum plans to help you use the computer more effectively.

The costs are low, the variety is tremendous, and the excitement of teaching with the help of a computer is all yours. From the pages of the #1 classroom computer magazine for K-8: *Teaching and Computers.*

Computer Poster Pack

Grades K-8

8 colorful computer-awareness wall posters (16 × 22), each with reproducible worksheets that reinforce concepts taught on the posters: computer history, parts of the computer, the keyboard, BASIC programming, Logo, and more. Teaching Guide includes worksheet answers and suggestions for additional activities. Reprinted from *Teaching and Computers* magazine.

Item Number XY39341 *$9.95*

Micro Puzzles

Grades 3-8

Forty pencil-and-paper puzzles for independent student work. Perforated blackline masters photocopy well and help teach programming basics, computer history, computing vocabulary, computer applications, and robotics. Published previously in *Teaching and Computers* magazine.

Item Number XY39308 *$5.95*

Science Lesson Plans

Grades 3-8

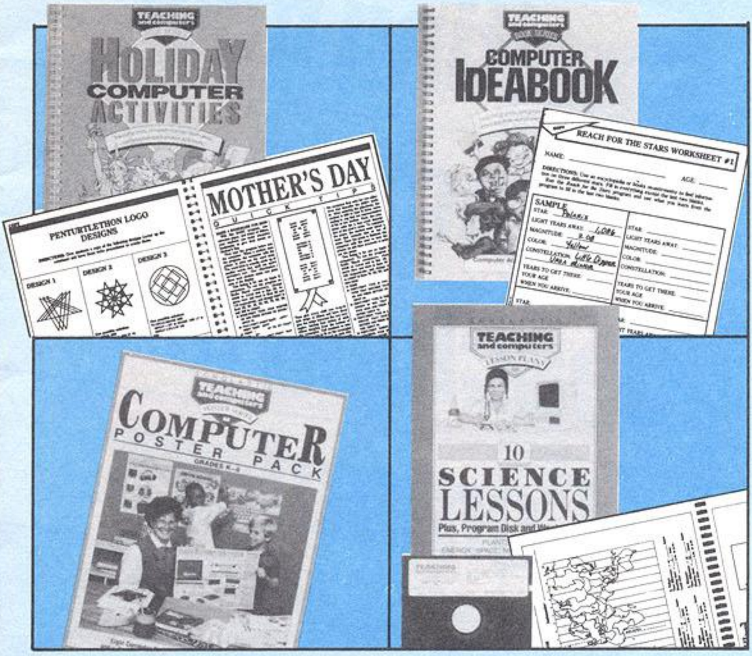
10 brief science lessons from Teaching and Computers magazine (energy, nutrition, plants, animals, space, the human body), each with a complete plan (including reproducible worksheets) and each with an easy-to-use BASIC program already on a disk for you. Includes how to make your own science quizzes on any topic.

Apple

Item Number XY39309 *$19.95*

PARTS OF A COMPUTER SYSTEM
ODES TO A COMPUTER
COMPUTER KID
WHAT MAKES A COMPUTER COMPUTE?
MY COMPUTER LOVES ME
TEACHING and computers
MICRO PUZZLES
40 Assorted Puzzles That Teach Computer Literacy
MICRO FUN!
32 WRITING TASK CARDS
10 SCIENCE LESSONS
Plus, Program Disk and Worksheets
History Word Search
Make a Lucky Flowchart
WHAT'S THE SETTING?
HEALTHY HEART WORKSHEET
PLANT DOCTOR WORKSHEET
Scholastic
Scholastic

New curriculum products for computer-using classrooms!


TEACHING and computers
HOLIDAY COMPUTER ACTIVITIES
COMPUTER IDEABOOK
REACH FOR THE STARS WORKSHEET #1
PENTURTLETHON LOGO DESIGNS
DESIGN 1
DESIGN 2
DESIGN 3
MOTHER'S DAY
QUICK TIPS
COMPUTER POSTER PACK
GRADES K-6
10 SCIENCE LESSONS
Plus, Program Disk and

Easy-to-use, ready-to-use classroom ideas, reprinted from the pages of *Teaching and Computers* magazine.

30-Day Evaluation Offer!

Order Card

Please send me the following *Teaching and Computers* products. I understand that if any of them fail to meet my needs, I may return them within 30 days, provided they are in resaleable condition, for a full refund or cancellation of my bill.

Title	Qty	Price	Amount
XY39341. **Computer Poster Pack**		$ 9.95	
XY39308. **Micro Puzzles**		5.95	
XY39309. **Science Lesson Plans**		19.95	
XY39278. **Social Studies Lesson Plans**		19.95	
XY39310. **Story Writing Task Cards**		19.95	
XY39046. **The Computer Ideabook**		15.95	
XY39047. **Holiday Computer Activities**		15.95	
		Total Amount due	

☐ Bill me (Min. order: $15; shipping and handling 8% extra [$2 minimum])

☐ Payment enclosed

Name____________________

School____________________

Address____________________

City/State____________________

Zip____________________

Signature____________________

In Canada, prices higher. Contact Scholastic, Richmond Hill, Ont. L4C 3G5.

Exciting new products, from Teaching and Computers.

Use this card to try them!

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 85 JEFFERSON CITY, MO.

POSTAGE WILL BE PAID BY ADDRESSEE

Scholastic Inc.
PO Box 7502
Jefferson City, MO 65102

Available Spring, 1987:

Social Studies Lesson Plans

Grades 3-8

10 social studies lessons from *Teaching and Computers* magazine (world geography, Black history, the stock market, election campaigns), each with a complete plan (including reproducible worksheets) and each with a ready-to-use program on a disk to save you time. Includes how to make your own social studies quizzes.

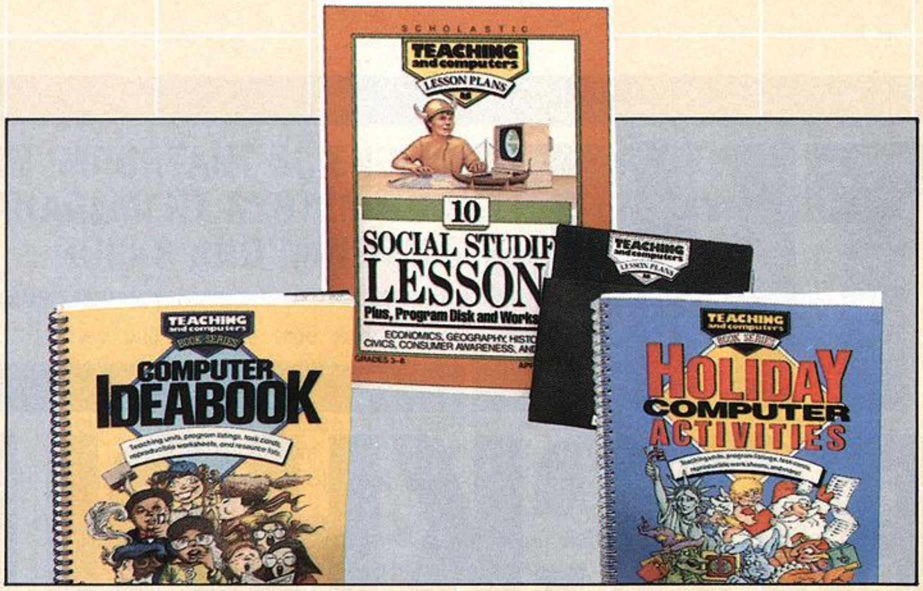
Apple
Item Number XY39278 *$19.95*

Story Writing Task Cards

Grades 3-8

32 Task Cards, plus a data disk, that help students use a word processor to develop story-writing skills: writing descriptions, developing plots and settings, vocabulary enrichment, more. Requires Bank Street Writer word processing program.

Apple
Item Number XY39310 *$19.95*


SCHOLASTIC
TEACHING and computers
LESSON PLANS
10
SOCIAL STUDIE
LESSON
Plus, Program Disk and Works
ECONOMICS, GEOGRAPHY, HISTO
CIVICS, CONSUMER AWARENESS, AN
GRADES 3-8
TEACHING and computers
COMPUTER IDEABOOK
TEACHING and computers
HOLIDAY COMPUTER ACTIVITIES

30-Day Evaluation Offer!

The Computer Ideabook

Grades 3-8

More than 30 self-contained lesson plans any classroom teacher can use with any major machine to integrate the computer into such curriculum areas as reading, language arts, social studies, math, science, music, and art. Many lessons include reproducible worksheets, task cards, recommended software, and program listings.

Item Number XY39046 *$15.95*

Holiday Computer Activities

Grades 3-8

Next time you celebrate a holiday with your class, let your computer join in! More than 200 self-contained activities (Thanksgiving, Fire Prevention Week, Election Day, Black History Month, Mother's Day, Bicycle Safety Week) with reproducible worksheets, task cards, and BASIC program listings. For use with any major computer.

Item Number XY39047 *$15.95*

Order Form

Scholastic Inc
PO Box 7502
Jefferson City, MO 65102

Please send the following materials. I understand that if any item proves unsuited to my needs, I may return it within 30 days for a refund or cancellation of my bill. (NOTE: All returns must be in resaleable condition.)

Title	Qty.	Price	Amount
XY39341 **Computer Poster Pack**		$ 9.95	
XY39308 **Micro Puzzles**		5.95	
XY39309 **Science Lesson Plans**		19.95	
XY39278 **Social Studies Lesson Plans** *Avail. Spring, 1987*		19.95	
XY39310 **Story Writing Task Cards**		19.95	
XY39046 **The Computer Ideabook**		15.95	
XY39047 **Holiday Computer Activities**		15.95	
		Total	$

☐ Bill me (Min. order: $15; shipping and handling 8% extra, $2 minimum)
☐ Payment enclosed

Ship to:

Name____________________
School____________________
Address____________________
City/State____________________
Zip____________________
Sig.____________________

Bill to (if different):

Name____________________
Title____________________
School____________________
Address____________________
City/State____________________
Zip____________________

Prices valid in U.S. only. In Canada, contact Scholastic, Richmond Hill, Ont. L4C 3G5. 8706 TC

THE ROCKHOUND FILES

By Marilyn Sue Ford
and Linda Gregg

KIDS CAN LEARN IMPORTANT SCIENCE SKILLS WHEN THEY USE A DATA BASE MANAGEMENT SYSTEM TO HELP THEM INVESTIGATE ROCKS AND MINERALS.

"It's so shiny!"

"Look at the way this one sparkles!"

"My magnet lifts this one up."

"I wonder why this one has layers."

So goes a typical conversation around the science table as students examine the rocks they've collected, and search for words to describe their qualities.

In this guided discovery unit on rocks, your students will make similar observations, and many more. They will become true *rockhounds.* They will have opportunities to investigate the shape of rocks as well as their weight, their degree of magnetism, their smell, their luster, their hardness, and the color of their streaks.

But that's not all. Children will also design and set up data file records that will let them enter and retrieve their rock research on a computer. When they finish, they will understand how a data base management system works — how it stores, sorts, and retrieves information. They will also know how to best use the information stored in a data base. They will also develop important science process skills: those of observation, communication, measurement, and classification.

All of the activities in this teaching unit were developed with *Scholastic pfs: file* software, but can be adapted for use with any data base management software. If you have never used this kind of software before and are unfamiliar with such data base terminology as *fields, records,* and *files,* read the "Data Base Primer" on page 13 for important introductory information.

(continued)

David Anson Russo

DavidAnsonRusso©1987©

PREPARATION

For the activities in this teaching unit, you will need at least 50 assorted rocks. Your students can collect the majority of these on their own. In addition, you might wish to contact local builders. They are usually a good source for rocks. If necessary, you can purchase rock and mineral sets from science education supply houses. Try to collect a variety of rock types.

Once your collection is complete, enlist students' aid in labeling each rock with a different code number. (To label the rocks for research, dab on a small spot of quick-drying enamel paint, let it dry, and number it with India ink.)

Egg cartons make great storage containers for your rocks. Place each labeled rock in its own compartment. Then display the rock cartons, along with several magnifying glasses, on the science table.

INITIAL EXPLORATION

When you are ready to begin the unit, have each child select from the rock cartons one sample to study in detail. Set aside adequate class time for students to take turns talking about their individual rocks. As children describe the rocks they have chosen, list the adjectives they use on the chalkboard or on chart paper. Adjectives might include: *heavy, light, black, smooth, rough, tan, jagged, reddish, pink and white, sandy, shiny, coarse, dull, light brown, layered, dotted, off-white, round, flat, egg-shaped.*

Next, help students organize their observations by showing them how to sort the adjectives into categories. Start them off by asking such questions as: Which of the words describe rock color? Shape? Texture? Weight? Have the students chart out these and other category names and the adjectives that accompany them. Here is how the previous list of adjectives could be sorted into a Word Bank chart:

Adjectives	Categories
white, off-white, reddish, black, pink and white, light brown, tan	color
light, heavy, medium	weight
jagged, lumpy, shiny, dull; layered, dotted, glassy, waxy	appearance
smooth, rough, soft, scratchy	touch
round, flat, egg-shaped	shape

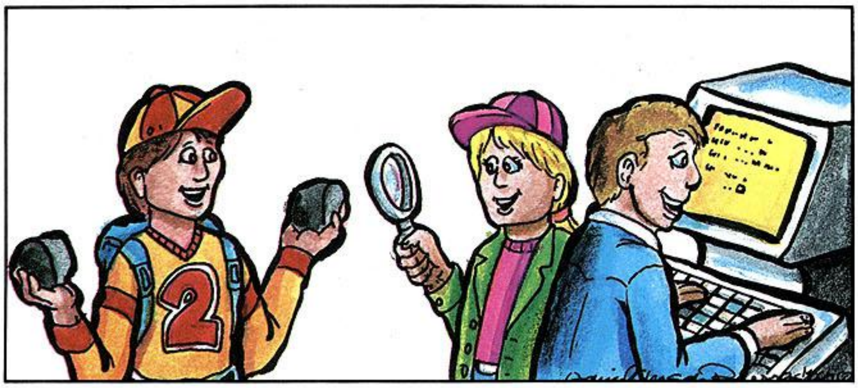
After the Word Bank discussion has ended, change the chart label that reads "Categories" to "Fields." The categories your students have chosen should be considered as core "fields" for the data records they will develop later. Some of the fields listed at this point may be eliminated, however, by the time the final data record format has been established on the computer.

ESTABLISHING DATA FIELDS

On the chalkboard or a large chart, help your students design a preliminary record format for rock data. (See sample record on next page.) Encourage kids to start with the field titles (categories) they generated in the previous activity and then add to and/or subtract from these.

You may wish to suggest, through guided discovery, some additional, more technical fields, such as HARDNESS, STREAK, and MAGNETISM. In this activity, as in others throughout this teaching unit, it is important to remember that the more you tell students, the less thinking they do for themselves. Try to get children to discover as many fields as they can on their own.

Explore each of the fields listed on the chalkboard or chart in greater detail. Have children define each field and discuss standardized words they could use to record data about each. (Adjust your Word Bank according to the results of the discussion.)



Rock Hardness Scale

Set aside space for a rock testing station, stocked with a copper penny, a steel knife, and a small pane of glass. For each rock, students should start with the fingernail test below and move as needed through each level of hardness testing. For the tests involving glass, caution students to place the glass on the table (not in their hand) when rubbing their rock across it.

Hardness Number	Test
1	Fingernail scratches it easily.
2	Fingernail barely scratches it.
3	Copper penny just scratches it.
4	Steel knife scratches it easily.
5	Steel knife barely scratches it.
6	Scratches glass easily.
7	Scratches glass and steel easily.
8	Too hard to be tested in this activity.

The following field definitions and activities may be helpful. As your field discussion progresses, students will probably continue to refine their list of fields.

Color: Have students with dark colored rocks move to one side of the room, and students with light colored rocks move to the other side of the room. Then instruct students to divide into smaller groups according to finer similarities in the color of their rocks (i.e., light gray, dark gray).

To sharpen their observations, have students consider such questions as: "Is my rock only one color? Many colors? More one color than another?" Tell them to describe the colors in their rock by beginning with the color there is the most of (the *predominant* color). For example, a rock that is mostly white but has more black specks than gray specks, would be described as "white, black, gray." Go around the room and let each child describe his or her rock in this fashion.

Tell children that the reason some rocks have several colors in them is that they are made up of several kinds of minerals. Different kinds of minerals can be different colors.

Two definitions are important to discuss at this point: the definitions for *mineral* and *rock*. A *mineral* is a chemical element found in or on the earth. Iron ore, ruby, quartz, and gold are minerals. *Rocks* are made up of minerals. Although rockhounds know the difference between rocks and minerals, they customarily call both "rocks."

Sample Data Record

GEOLOGIST:
ROCK LABEL:
COLOR:
WEIGHT:
TOUCH:
SHAPE:
LUSTER:
SMELL:
TRANSPARENCY:
HARDNESS:
STREAK:
MAGNETISM:
SPECIAL PROPERTIES:

Based on their own observations about rocks — and a few suggestions from the teacher — students develop a record format for the computer data file.

Weight: There are different ways to describe the weight of your rocks. One way is to use relative terms, such as *heavy, medium,* and *light.* Another way is to use exact measurements, such as specific *grams.* In either of these cases, if all of the rock samples are not the same size, the measurements may not indicate which rock types are truly heavy and which are light. For this reason, scientists do not use either of these measurement systems. They use what is called specific gravity. The specific gravity of a rock is the weight in grams of the rock divided by the weight in grams of an amount of water that has the same volume as the rock. If the specific gravity of a rock is less than 1, the rock is lighter than an equal amount of water. If the specific gravity is, say, 2, the rock is twice the weight of an equal amount of water.

Just about any book on rock collecting explains in detail how to measure specific gravity. In most cases, however, this process is a little too sophisticated for elementary students. Instead, ask *students* to decide how to accommodate for differences in size. Children are very creative; when challenged to solve this problem, they usually develop an ingenious method.

Appearance (Luster): The luster, or glow, of a rock is determined by how its minerals absorb, reflect, or refract light. Words associated with luster include *metallic, glassy, pearly, silky, dull,* and *earthy.* Your students may have included these terms under a field entitled APPEARANCE or LOOKS. Decide if they should learn the term *luster* and if the field name should be included in their record format.

Touch: Have students list the adjectives that describe how their rocks feel to them. Ask if any of these adjectives are synonyms, and then pair these words: *rough* and *coarse,* for example. Have the class choose the most descriptive adjective in each pair. Now go to the Word Bank and replace the words you had originally assigned to the TOUCH field with these final choices.

Shape: Rocks come in many shapes, so it is a challenge for students to develop a list of adjectives that describe the shape of their rocks. Have students brainstorm all the shape words they can think of. Next, have them pair synonyms and choose the best adjectives to record as standardized vocabulary in their Word Bank.

Smell: Tell students to breathe on their rock (this adds moisture to it and increases its odor) and then smell it. Ask, "Does it smell earthy, like dirt after a rainstorm, or does it have no smell?" List the adjectives that

(continued)

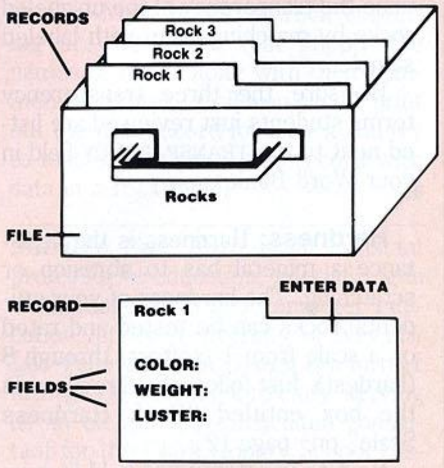
Data Base Primer

A data base management program is a piece of software that lets you organize, store, and retrieve information. It is like an electronic filing cabinet. All data base programs contain three important elements: *fields, records,* and *files.*

1. Field: A field is a category or item of information. In this rock data files unit, adjectives are divided into categories that become field titles. COLOR, WEIGHT, and LUSTER are examples of field titles.

2. Record: A record is a collection or listing of related fields. In the rock data files, there is a record for each rock. The COLOR, WEIGHT, and LUSTER fields for Rock 1 are on one record, while Rock 2's COLOR, WEIGHT, and LUSTER fields are on a separate record.

3. File: A file is a collection of related records. The records on Rocks1, 2, and all other rocks would make up the Rock Data File.



Rock Data Searches

Questions like these will give students plenty of practice searching for and retrieving data from their computerized rock data file. Encourage kids to think up (and answer!) additional data search questions of their own.

1. How many pure white rocks are listed?
2. How many rocks are listed as "white, black, gray"?
3. How many black rocks are smooth to the touch?
4. How many more heavy rocks are there than light rocks?
5. How many more dull looking rocks are there than shiny rocks?
6. How many medium-weight rocks have a hardness of 5 or more?
7. Do any glassy rocks have an earthy smell?
8. How many nonmetallic rocks have a white streak?
9. How many odd-shaped rocks are shiny?
10. Are any metallic rocks magnetic?

---

describe the smells and then work with your class to standardize the vocabulary and revise the Word Bank accordingly.

Transparency: Transparency is the degree to which minerals in rocks transmit light. Near a window or a light source, display rock samples that have been labeled according to their transparency. If you can see images through a rock, label it "transparent." If you can see light but not specific images through it, label the rock "translucent." Any rock you cannot see through at all should be labeled "opaque." Give children time to inspect these rocks on their own. Then bring out some unlabeled rocks. As a group, determine the tranparency of the unlabeled rocks by matching them with labeled samples.

Be sure the three transparency terms students just reviewed are listed next to the TRANSPARENCY field in your Word Bank.

Hardness: Hardness is the resistance a mineral has to abrasion or scratching. The hardness of your students' rocks can be tested and rated on a scale from 1 (softest) through 8 (hardest). Just follow the directions in the box entitled "Rock Hardness Scale" on page 12.

Next to the HARDNESS field in your Word Bank, list the numerals 1 through 8.

Streak: Give students a ceramic streak plate or an unglazed porcelain tile and tell them to rub their rock across it. The rock will leave a powdery streak. With the help of a streak chart (found in most rock books) the color of the streak can be used to identify the rock's minerals. The streak may not be the same color as its rock. For example, both gold and pyrite (fool's gold) are yellowish rocks, but gold will leave a golden streak and pyrite will leave a greenish-black streak. The streak test lets you tell real gold from fool's gold! At this point you do not need to consult a streak chart. All you need to do is list the color results of students' streak tests next to the STREAK field in your Word Bank.

Magnetism: Let students use magnets to determine if a rock contains magnetic material. Standardized Word Bank vocabulary for this field could be as simple as *magnetic* and *nonmagnetic*.

FORMATTING THE DATA RECORD

Students must now make a final decision on the fields they believe will adequately describe the physical properties of rocks. This will form the final record format that will be entered into the computer via data base software. *Scholastic pfs: file,* which is the software this teaching unit uses, allows unlimited characters per field, and unlimited fields per record, but if you are using another data base program students may have to limit the number of fields and letters included in the record format.

To the list of fields your class finally selects, be sure and add a field for the student/geologist's name and a field for extra facts, entitled OTHER or SPECIAL PROPERTIES.

It may be a good idea at this point to train two or three student computer "experts" in the record design and data entry functions of your data management program. Have them work out the final record format on the computer. (This team of experts will also be able to assist classmates later, in the data entry phase of this teaching unit.)

After reviewing their work, print out a blank record and give each student a photocopy.

RECORDING THE DATA ON PAPER

Have each student fill in a record sheet for his or her original rock. If time and your specimen collection permit, students can research additional rocks as well. Remind kids of the research skills they have learned so far, and encourage them to put these skills into practice.

The revised Word Bank should be prominently displayed. Tell students that if they use standardized vocabulary for their field data, it will be easier to compare and contrast records later on.

SIMULATING A DATA BASE

After students have recorded all the data for their rocks, they are ready to experience data base programming. The following off-computer activity is a good way to physically show children how this process works.

Tell each student to hold onto his or her rock and its record sheet. Then lead children to an open area that is free of tables, chairs, and any other obstacles. Have them sit down.

Tell kids that you will help them simulate how their computer data base works; you will direct them to stand or sit according to various rock *attributes* (field characteristics) you call out.

Start with the following dialogue: "All students with rocks whose COLOR field is listed as white, please stand. Everyone else remain seated. Of those standing, look at your WEIGHT field. If your rock is listed as 'heavy,' remain standing; otherwise, sit down. Now hold up your rock; it should be white and heavy if you are standing, and if you are sitting, your rock is not white and heavy. We have searched for rocks that share common attributes in two fields; we have found rocks that are both white and heavy."

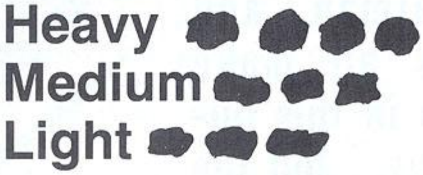
Have everyone sit down and tell the class that you will now search for three shared attributes. Use the following dialogue: "Check the TOUCH field; stand if you listed 'smooth' as the adjective in this field. If your rock has 'medium' in the WEIGHT field, remain standing. Finally, check the LUSTER field; if your rock is described as 'dull,' remain standing. Hold up your rock; it should be smooth to touch, of medium weight, and have a dull luster."

Continue this human data base activity until your students have a good understanding of how a computer data management program can search file records and sort data to find rocks that share common attributes.

USING THE COMPUTERIZED DATA BASE

Have students exchange their completed record sheets. Tell kids to proofread the sheets for spelling errors and to verify that the adjectives used match those on the Word Bank chart. As a second check, when they are ready to enter data into the computer, have the students pair up and select a record sheet or sheets that neither they nor their partner has worked on previously. One partner should type while the other reads the data aloud.

Rock Attribute Pictograph



Comparison Statements:

1. There are more heavy rocks than light and medium-weight rocks in our collection.
2. There are equal numbers of lightweight and medium-weight rocks in our collection.

Have students summarize their rock file data with simple graphs and text.

When data from all the record sheets has been typed in, students are ready to use their computerized data file. Demonstrate to the class how to retrieve rock data with your data base management program. Like *Scholastic pfs: file,* most data base management programs will allow you to search for and print out records that contain one or more specified variables. For example, your students could have the computer retrieve records for all rocks whose COLOR field is listed as white, or whose COLOR is white and WEIGHT is more than four grams.

When the students have a feel for how to retrieve data, they are ready to make their own computer searches. (Again, it will be beneficial to you and your students to specially train two or more computer experts to help classmates retrieve data from computer files as they work.) Kids will probably first ask the computer to find rocks like the one they researched themselves. After such initial exploration, they're usually eager to begin asking higher level questions. Encourage their curiosity with a list of suggested rock data searches (see sample, page 14). You may soon discover that the more questions students ask of their computer data file, the more questions they seem to generate. Give students plenty of time to explore and share their discoveries. They will then be ready to move on to the following activities or to design their own retrieval projects.

Search-Compare-Debug: In this whole-class activity, all students will need to have their rock and their completed record sheet close at hand.

Begin by having a student go to the computer and search for rocks that share common attributes. For example, a child might search the data file for all the lightweight, gray, opaque rocks, and print out that data.

Next, run a human check on the results the computer produced. Here is how you would do that in the case of the lightweight, gray, opaque search: Ask students with lightweight rocks to stand; tell them to remain standing only if their rock is also gray and opaque.

The computer search and the human search should match. If not, it is problem solving time: either the computer file or the record sheets need to be debugged! The activity itself rewards accuracy and emphasizes the need for correct spelling.

Graphing Rocks By Attribute: Choose any field and make a list of the adjectives in the Word Bank for that field. Search the file for the number of rocks described by each adjective. Make a pictograph or bar graph to display the data found (see sample pictograph, this page). Ask students to summarize the data in a comparison statement, such as "There are more heavy rocks than medium and lightweight rocks in our collection," or "We have an equal number of medium and lightweight rocks." Encourage students to try the same exercise using the adjectives from two or more fields in the same search.

Matching Data To Geological Names: Label a set of rocks and minerals with their geological names. Then have students complete a record sheet for each geologically named rock or mineral. Taking one specimen at a time, they should enter the major attributes listed on its record sheet as search/retrieve specifications. If the search turns up a rock record that closely matches the record for the named sample, your students will know the name of the rock or mineral in their file.

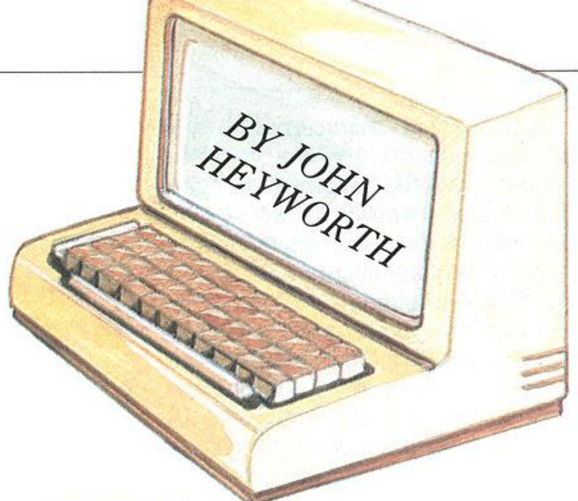
There is another way for children to match rock data to geological names. Most books on rock collecting provide tables that supply the names of rocks along with their common attributes. Children could print out the data record for a rock and try to match the data in this record with data in a rock table. ■

Marilyn Sue Ford is an assistant professor of education, specializing in elementary math and computer education, at the University of Nevada/Las Vegas. ***Linda Gregg*** is a former fifth grade teacher currently serving as an elementary curriculum consultant for the Clark County School District in Las Vegas.

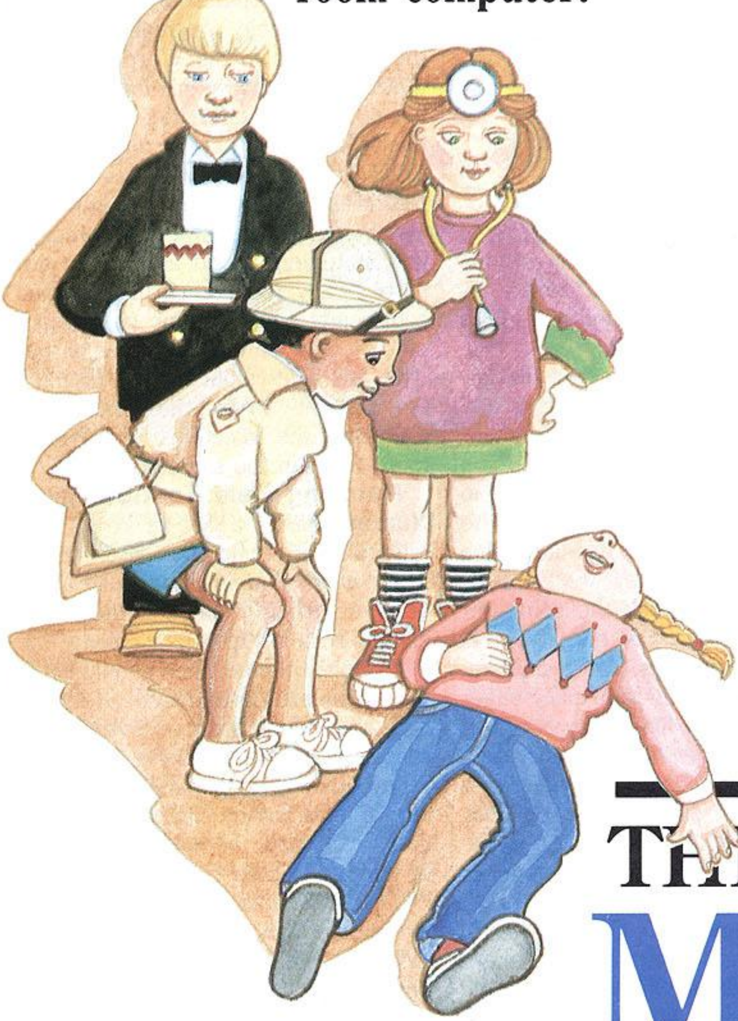
Classroom Computer Play

THE MYSTERY OF MEGAN WATT

Superwoman, Batman, and Sherlock Holmes all make guest appearances in this humorous two-act play. . .but the star of the show is your classroom computer!



BY JOHN HEYWORTH



What has happened to computer whiz Megan Watt? Did someone murder her? Sherlock Holmes, Superwoman, Batman, and Robin are among the notable crime investigators who try to answer this question.

With the help of a Logo program, a real computer delivers lines (via its monitor) and makes music in this play, as it assumes an important role in investigating the mystery!

In order for the audience to easily see and hear the computer's reactions throughout the play, it is best to stage The Mystery of Megan Watt *in a small room, such as a classroom. Before performing the play in front of an audience, students should carry out several rehearsals. This will ensure that the computer program runs smoothly and that your actors are prepared for the computer's "actions" during the drama.*

The program procedures in this play were designed for use with Terrapin Logo. The program can be converted for use with other versions of Logo. However, some of the special musical effects may be lost in the process.

Permission is granted to make copies of this play and its program procedures for use by your students. (Play begins on next page.)

WATT HAPPENED TO MEGAN?

Thomas Sperling

CHARACTERS

Sir Logo, famous world traveler

Colonel Byte, Sir Logo's computer specialist

Megan Watt, computer whiz and the Colonel's niece

Syntax, the butler

Dr. Troubleshoot, a medical doctor

P.C. Smith, a police officer

Sherlock Holmes, detective

Dr. Watson, Holmes' sidekick

Superwoman, superheroine

Batman, superhero

Robin, Batman's sidekick

CPU, the computer

CPU's Helper (optional)

PROPS

You will need: your classroom computer and a table for it; three classroom chairs; two desks with assorted papers piled on them; Terrapin Logo Language diskette and Utilities Disk; the program listing on page 52 ; pad, pencil, and toy handcuffs for P.C. Smith; five or six empty paper cups for Syntax; a toy stethoscope for Dr. Troubleshoot.

COSTUMES

Costumes for this play should be kept simple. They need be no more than something by which to identify each character. For example, you may want to use a white doctor's jacket for Dr. Troubleshoot, a raincoat for Sherlock Holmes, a red cape for Superwoman, and so on.

PREPARATION:

Load Terrapin Logo into your computer. READ "MUSIC from your Utilities Disk. Then type in the procedures on page 52 . Save them on a blank, formatted diskette under the file name MYSTERY.

Set up your computer on its table, center stage. Arrange a chair at the keyboard so that when a user is seated there, his or her back is to the audience. Elevate the computer monitor by placing it on a shelf, or by putting some books underneath it. Everyone in the audience should be able to read the computer's "lines" without standing up and blocking the view of others. If it is not possible to elevate your computer monitor, assign one student to be the computer's helper. This student, who remains hidden either on or off stage, is responsible for repeating out loud all of the computer's "lines."

To one side of the computer, set up the two desks with assorted papers on them to represent a work area in an office. There are two chairs in the work area. With the exception of these simple furnishings, the stage remains bare.

To start the computer program, type MYSTERY. (Logo should already be loaded into your computer.) *"THE MYSTERY OF MEGAN WATT" BY JOHN HEYWORTH* should appear centered on the computer monitor.

TIME

The present.

SETTING

An office in Great Britain. *(Children may wish to use British accents for all of the characters except Superwoman, Batman, and Robin.)*

ACT I

Megan Watt is sitting at the computer with her back to the audience. She is not touching the keyboard. At the work area, Sir Logo and Colonel Byte are busy shuffling papers. All of a sudden, as if hit by a great idea, Megan sits up straight in her seat. With a large motion of her finger, she hits any key on the keyboard. The words "CPU AT WORK." appear on the screen. Megan is excited. She hits another key. The computer makes noises, and the words "IT DOES NOT COMPUTE." blink on and off repeatedly. Megan slumps back in her chair sadly. Colonel Byte turns from his work to speak with Megan.

Colonel Byte: I say, Megan, has the computer completed those calculations that I asked you to input? I'm just dying to know the shoe leather-per-kilometer rate of Sir Logo's last trek around the globe!

Megan *(turns to Colonel Byte)*: Not yet, Uncle Byte. I'm working as quickly as I can, but I'm afraid CPU is running a bit slowly today. *(Megan turns back and presses any key. After beeping for a moment, the noises stop, and the words "IT'S TEATIME. AREN'T WE GOING TO TAKE A BREAK NOW?" appear on the screen. Syntax the butler struts on stage, carrying three paper cups. He places a cup next to each of the three players on stage.)*

Syntax: Here you go, everyone. It's teatime.

Megan: Thank you, Syntax. *(Syntax struts out again. Megan drinks out of the cup.)*

Sir Logo *(turning to Colonel Byte)*: By the bye, Byte old chap, did you work out that time travel trek to the 21st century that you and I were talking about?

Colonel Byte: Time travel? Oh

(continued)

dear. . . . *(Colonel Byte looks down at his watch, then sighs with relief.)* You have plenty of time to prepare yourself. You're not due out for another. . .23 hours, 12 minutes, and 21 seconds. Plenty of time, plenty of time. No hurry at all. *(They all go back to work. Megan finishes her tea, puts the paper cup down, and presses another key. "SUDDENLY I FEEL VERY SLEEPY . . .YAWN-YAWN-YAWN." appears on the screen. Lullaby music begins to play. Megan stands bolt upright, completes a few half turns, makes a funny gurgling noise, and falls on the floor as though she has fainted. Colonel Byte and Sir Logo watch in horror as Megan's legs kick up once, twice, or three times. Finally she is still. Colonel Byte and Sir Logo jump up and run over to where Megan is lying on the floor.)*

Colonel Byte *(shaking Megan, as though to wake her up)*: Megan, Megan, are you all right? *(Megan does not move or react in any way.)*

Sir Logo: What's wrong with her?

Colonel Byte *(standing up)*: I don't know. It seems she's fainted. Sh. .sh. .sh. .she. .may even be d. .d. .dead!

Sir Logo *(standing up)*: Dead! She can't be! *(He looks down at Megan.)* Between you and me, Byte, I've never seen her looking better.

Colonel Byte: Yes, but she's not moving! *(Syntax returns, carrying two more paper cups.)*

Syntax: More tea, anyone? *(He notices Megan lying on the ground.)* Oh my goodness! What has happened to Megan?

Sir Logo: We don't quite know.

Colonel Byte: Syntax, please run for help. Call the police. Find a doctor. Do something!

Syntax: Yes, of course. Right away. Erm, gosh, gee whiz, golly. *(He rushes out.)*

Colonel Byte: Do you think that the computer might give us a clue as to what is going on?

Sir Logo: The computer? Are you kidding? A computer can't *see* anything. What in the world could it possibly tell us?

Colonel Byte: Well, you never know. *(Colonel Byte moves to the computer, which is "snoring" and playing lullaby music.)* Hey, computer! Wake up a minute. We need to ask you something! *(Colonel Byte presses a key. After a moment, there is a beeping noise. "YES? YES? CAN I HELP YOU?" appears on the screen. The Colonel pretends to type in. . . .)* What. . .has. . .happened. . .to . . .Megan? *(saying the words out loud slowly as he pretends to type them. As he pretends to press down the last letter in the word Megan, Colonel Byte really does press down a key. "YOU GOT ME. I ONLY KNOW WHAT YOU TELL ME, REMEMBER?" appears on the screen.)*

Sir Logo: What does it say?

Colonel Byte: It's not talking. Still, I think it may know more than it's letting on. Let me try one more time. *(The Colonel presses another key. The lullaby music begins again. "PLEASE! I NEED MY BEAUTY REST!" appears on the screen.)* Hmmph! Just what we needed! A vain computer! *(Syntax returns. Dr. Troubleshoot rushes in behind him.)*

Syntax: This is the patient, doctor. *(Dr. Troubleshoot sits down on the floor next to Megan and takes her pulse. There is a pause of silence.)* Will she live? Is she all right?

Dr. Troubleshoot: It's still too soon to tell. Tell me, what was she doing at the time of the accident?

Sir Logo: All she was doing was sitting over there *(he points to the computer)*, working at the terminal.

Dr. Troubleshoot: Ah-ha! A terminal illness! We'd better monitor her progress.

Syntax: Could it be a back problem? She *was* complaining of a slipped disk when we were traveling through Siberia recently.

Sir Logo: Are you sure you don't mean a floppy disk?

Dr. Troubleshoot: Hmmm. Her illness is not as BASIC as it first seemed.

Syntax: Then there was that bug she got in Bermuda. It was days before she was back up to her usual drive.

Colonel Byte: Could this be due to that RAM she wrestled in the Rockies?

Sir Logo: More likely it's all the chips she's been chomping since we've been back in Britain.

Syntax: Gentlemen, please! How silicon you all get! And with poor Megan lying here so ill!

ACT II

Same scene setup as above, except that P.C. Smith, a police officer, is now on stage with the others. He is holding a small pad and pencil and is furiously taking notes as the others speak.

P.C. Smith: Okay, okay, just one person at a time. Someone tell me what is going on here. First of all, what's the victim's name?

Syntax: Megan, sir.

P.C. Smith: Megan what?

Syntax: That's right, sir.

P.C. Smith: Megan what? What's her last name?

Syntax: Correct.

P.C. Smith: Are you deaf or something? I want to know that young woman's last name.

Syntax: Watt.

P.C. Smith *(in a louder voice than before)*: WHAT'S THIS YOUNG WOMAN'S LAST NAME?

Syntax: That's what I said sir.

P.C. Smith: Huh?

Syntax: No, Watt. Watt's her last name. W-A-T-T. Watt.

P.C. Smith: Watt? Well, why didn't you say so in the first place? Do you all know Watt?

All: Of course we do.

P.C. Smith: Just don't get fresh. I suspect that you people are all involved in this terrible crime. *(All look at each other in amazement.)* Now then, which of you were here when this crime occurred?

Colonel Byte and Sir Logo: We were, sir.

P.C. Smith: Ah-ha! So you admit it was a crime?

Colonel Byte: We do not!

P.C. Smith: Oh yes you did. I heard you with my own ears. In the name of the law, you two villains are under arrest.

Sir Logo: But, but, but, but, but. . . .

P.C. Smith: No "buts" about it. I've had enough but-tering up for one day. Now, just hold still a moment while I get these handcuffs on you. *(The police officer moves toward Colonel Byte and Sir Logo. Before he can get the handcuffs on either of them, though, Sherlock Holmes enters, followed by his sidekick, Dr. Watson.)*

Sherlock Holmes: Not so fast, constable. *(All turn toward Holmes.)*

All: Sherlock Holmes!

Sherlock Holmes *(turning to Watson)*: Now, Watson, observe carefully. What you are witnessing here is a serious miscarriage of justice.

Dr. Watson: But Holmes, you amaze me. How can you tell so soon?

Sherlock Holmes: Elementary. *(He moves to the desks where Sir Logo and Colonel Byte had been working.)* Just as I thought. *(He picks up a sheet of paper and holds it up to the light.)* There is not even the slightest sign of sweat on this page. A worried murderer would have had clammy hands before committing such a crime.

Dr. Watson: Amazing! You make it sound so simple, Sherlock.

Sherlock Holmes: Not at all, Watson. One has only to use one's eyes and one's brain.

Dr. Watson: Then. . .you know who the murderer is?

Sherlock Holmes *(pacing the floor)*: There is only one person who could have committed this evil deed.

All: Who?

Sherlock Holmes: A person with a perfect alibi. A person not seen in the room, but whose presence earlier has caused this unfortunate death.

Dr. Watson: Come on, Holmes. Who did it?

Sherlock Holmes: The butler.

All: The butler? You mean Syntax?

Sherlock Holmes: I do indeed. *(He moves to the computer and picks up Megan's cup.)* I see you use paper cups and not glass for your drinks.

Dr. Troubleshoot: People who use glasses make spectacles of themselves.

Sherlock Holmes: Ah, but if this had been glass, perhaps Megan would have noticed the poison in her drink.

All: Poison!

Sherlock Holmes: Yes, poison administered by Syntax. Constable, arrest this butler.

Superwoman *(entering stage right)*: Not so fast, Sherlock.

All: Superwoman!

Superwoman: A clever theory, Sherlock, but not a bit of truth in it.

Dr. Troubleshoot: How can you tell, Superwoman?

Superwoman: Interesting that you of all people should ask me that, Dr. Troubleshoot.

Dr. Troubleshoot: Why is that?

Superwoman: Because with my X-ray vision I saw *you* inject Megan with a deadly poison as you pretended to take her pulse.

All: Dr. Troubleshoot?

Superwoman: Constable, arrest this doctor.

P.C. Smith: Right away, Superwoman. *(Batman and Robin enter stage left.)*

Batman: Not so fast, Superwoman.

All: Batman!

Batman: Dr. Troubleshoot did not kill Megan Watt. Someone has lined these walls with lead to muddle your vision.

Superwoman: But who could have done such a thing?

Robin: The same dastardly fiend who committed this murder.

Syntax: And who would that be?

Batman: Constable Smith.

All: P.C. Smith?

Batman: Yes. I've been on your trail for some time now, Smith. *You* murdered Megan so that you could earn fame and fortune by solving the mystery.

Syntax: How awful!

Robin: Suffering sassafras, Batman! This *is* awful. Imagine! An upholder of the law stooping that low!

Batman: Arrest yourself, constable. *(At this point, one of the actors should press a computer key without being seen. The computer makes attention-getting sounds and — if you have a color monitor — different colors blink on and off the screen.*

All: Look! What's that? It's the computer! *The actors all move back to give the computer more space. Finally the sounds and colors stop, and on the screen appears the message: "NOT SO FAST, BATMAN!"*

Colonel Byte: The computer has a message. *(All continue to stand back as the Colonel goes to the keyboard.)* Perhaps this complex machine of high technology will help us to solve our mystery.

Syntax: Hurry! Let's see what it has to say.

Colonel Byte: Right away. *(Colonel Byte presses a key. The computer responds with this message: "IT WAS I WHO KILLED MEGAN WATT."*

Colonel Byte: You? But how? *(He presses another key. On the computer appears the message "WITH 10,000 VOLTS OF MY ELECTRICITY."*

Syntax: Ten thousand volts! How shocking!

Dr. Troubleshoot: Poor Megan.

Superwoman: That sure is a lot of volts for one Watt.

P.C. Smith: Well, at least we have a confession at last.

Sir Logo: I suspected the computer from the very start.

Troubleshoot: It is not very user friendly, is it?

Colonel Byte: An evil machine is a dangerous thing.

Sherlock Holmes: I suppose we should arrest it at once.

P.C. Smith: Yes, I suppose we should. *(All start to move toward the computer. Just then, though, Megan wakes up.)*

Megan: Not so fast, everybody.

All *(turning to stare at her)*: A ghost!!

Megan: No it's not. It's me, Megan.

Colonel Byte: Megan? But. . .we all thought you were dead.

Megan *(looking pleased with herself)*: Well, I'm not. Good joke, huh?

Troubleshoot: You mean. . .there was nothing wrong with you?

Megan: No, not too much. I was just suffering from a slight case of D.O.S.

All: D.O.S.? What's that? Disk Operating System?

Megan: No. Dead-tired Operator Syndrome.

All: Dead-tired Operator Syndrome?

Megan *(stretching and yawning)*: Yes. And now that I'm refreshed, I might as well get back to work. *(Megan pushes through the small crowd gathered around her and sits at the computer. She presses a key on the keyboard. The message "YOU CALL THAT A JOKE! IT WAS IN TER-*

(continued)

Now Available:

Low cost reprint copies of the most popular articles from three years of TEACHING and computers

Title	Cost	Quantity	Sub-Total
LOGO CENTER: Seven lesson plans for teachers to use to help their students learn with Logo. Each lesson includes activities, task cards, program listings, and reproducibles. The materials cover traditional curriculum objectives. (19 pages)	$5.95		
DATA BASE PROJECTS: Three data base projects for Social Studies. Topics are: The Presidents, American Indian Data File, and World Travel. (18 pages)	$5.95		
MATH TEACHING UNITS: Three lesson plans for teaching math. Plans include spreadsheet activities and a program listing. (16 pages)	$5.95		
TYPING TUTORS: Activities for teachers to use to instruct students in touch typing. (10 pages)	$4.95		
WORD PROCESSING: Word processing activities for teaching language. Topics include, Secrets to Teaching Word Processing, Better Letters, and Write Your Own Mystery Story. (18 pages)	$5.95		
		Total	
		Less 25% for orders of 25 or more	

Payment must accompany orders. Please allow 4-6 weeks for delivery.

School/Institution ________________

Address ________________

City/State ________________ Zip ________

Other articles may also be available; please write for more information on the titles or subjects desired.

Mail to: TEACHING AND COMPUTERS Reprints
Scholastic Inc., 730 Broadway, New York, NY 10003

Clip and mail today

(continued from page 19)

RIBLE TASTE. . .AND IT WASN'T EVEN FUNNY." appears on the screen. There is a stunned silence. Then everyone chases Megan out of the chair and off stage. Before she runs, however, Megan presses one last key. There is a little music and the computer concludes the play with these words: "THE END."

(See the program listing on page 52.)

FOR DISCUSSION

The Mystery of Megan Watt is primarily a play for your students' enjoyment and for practice in reading and performing out loud. However, after the students in your class are familiar with the play, you may want to use the text as the basis of a discussion about computers. Here are some sample discussion questions you may want to bring up.

- CPU, the computer in the play, is depicted as almost lifelike. All one has to do is press a key or speak out loud and CPU responds as though it has heard and understood everything. Is this the way most computers really work? Are there any situations in which computers really do work this way?
- CPU seems to need a lot of rest after a bit of hard work. How realistic is this?
- When Syntax brings in the tea during break time, Megan remains at the computer while she drinks her tea. Is this what students should do in real life when they take a snack break from working at the computer? *(No.)* Were there any other computer center rules broken in the play? *(Some students might mention the way the characters run off stage at the end of the play without first removing the data disk and turning the computer off.)*
- Many of the jokes in *The Mystery of Megan Watt* are based on *puns*, or plays on words. What puns on computer words are there in the play? Make up other computer puns. How could you add them to the play?

Reprinted courtesy of Classroom Computing, *Ashton Scholastic, 1985.* ■

THREE

◆◆◆◆◆◆◆◆◆ O

SOFTWAR

Computers cannot do anything by themselves. They have to be told what to do and how to do it. They have to be given very special instructions. These instructions are called *software*.

Software has been stored on many different devices throughout

Inven

196

Hard Disk

Gregory Edwards/International Stock Photography

Hard Disk Drive

Control Data

Inven

197

E TYPES
OF ◆◆◆◆◆◆◆◆◆
RE DISKS

pe
al

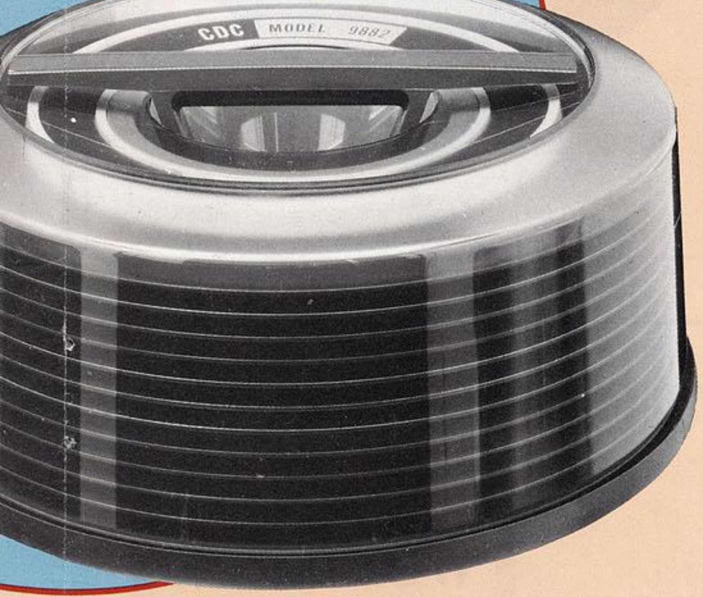
ut

history — from punched cards to diskettes (or disks). Many modern software devices are in the form of disks. Below are three types of disks that are used today. How many have you used?

nvented:

60s

sk

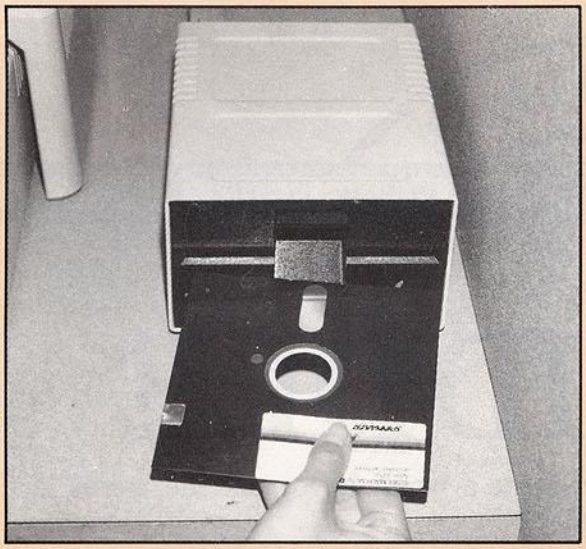


Control Data Corp.

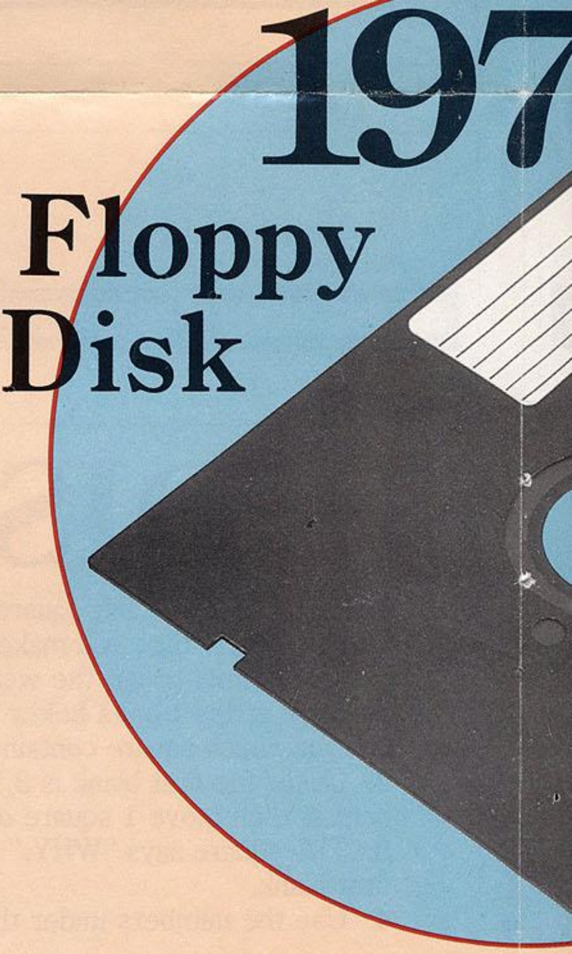
A hard disk is a round, flat piece of metal. It is about the size of a 33 1/3 RPM phonograph record. Several hard disks are often stacked to form a disk pack like the one in the picture at left. As many as 11 disks may be in a pack. The packs are used in a large disk drive that is connected to a computer. Some hard disk drives do not use disk packs. Instead, a single hard disk is built into the drive.

nvented:

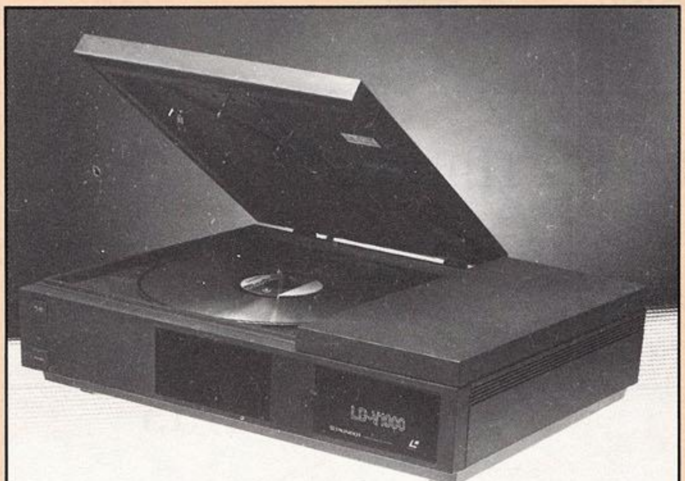
70s



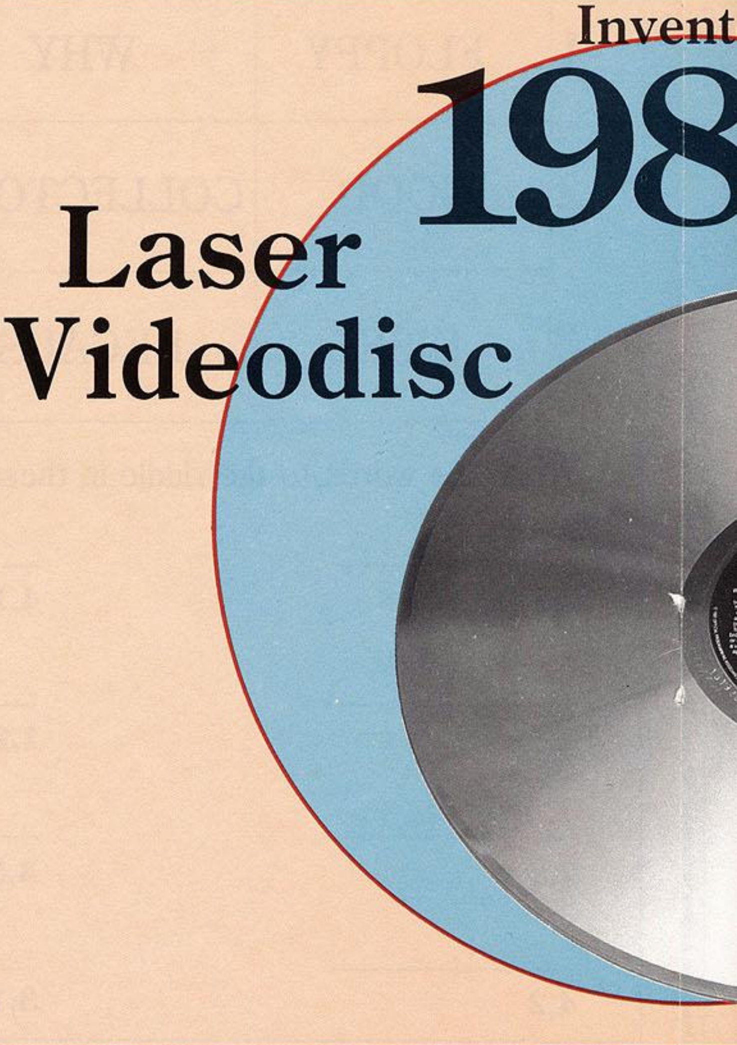
Floppy Disk Drive


197
Floppy
Disk

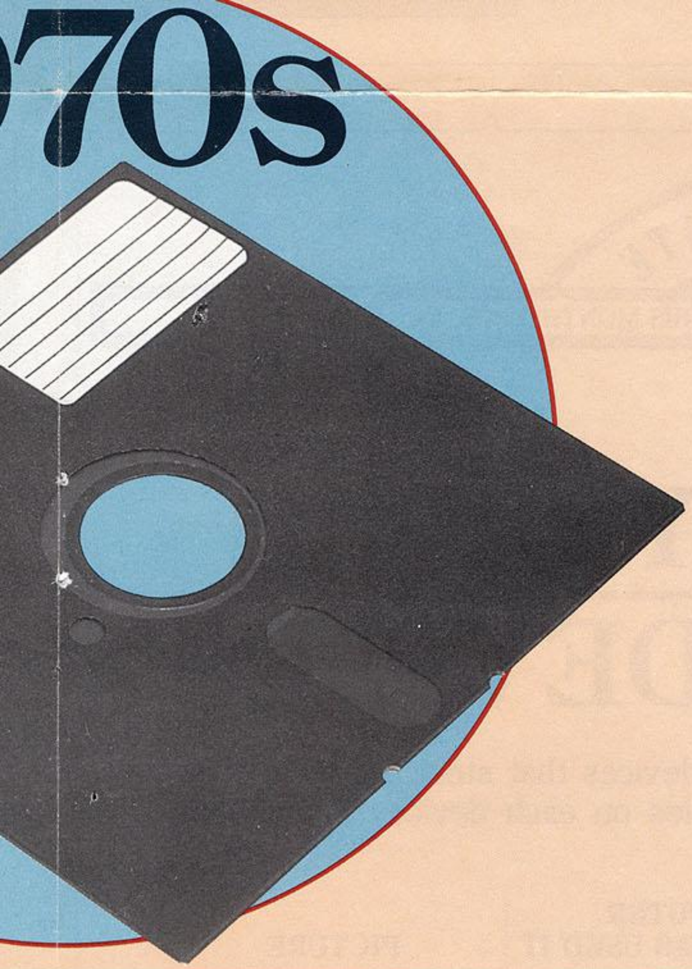
Invent



Laser Videodisc Player


198
Laser
Videodisc

70s



Like a hard disk, a floppy disk is flat and round. However, it is made of plastic instead of metal. A floppy disk is much smaller than a hard disk and is covered with a square paper jacket to help protect it. It's called "floppy" because you can bend it back and forth (but don't try this; you might harm the disk). It runs on a floppy disk drive that is hooked up to a computer.

vented:

80s

Optical Programming Associates
Side 1
FUN & GAMES

A laser videodisc is a flat, round piece of plastic that is about the size of a 33 1/3 RPM record. It can store pictures that show motion, much like a video cassette tape stores movies. Like a video tape, a laser videodisc can also store sound and written text. A single disc can hold all the words contained in 170,000 books. A laser videodisc runs on a laser videodisc player.

Teaching and Computers Poster Series
Copyright © 1987 by Scholastic Inc.

COPY

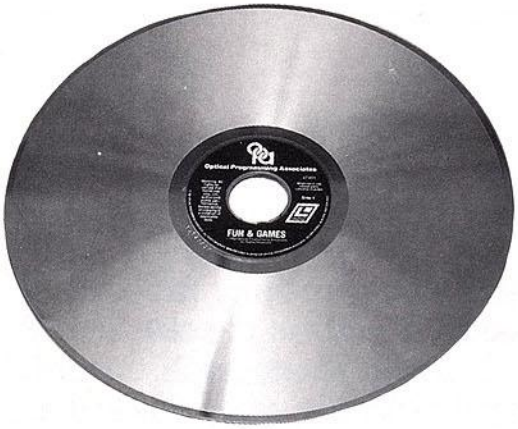
PRIMARY

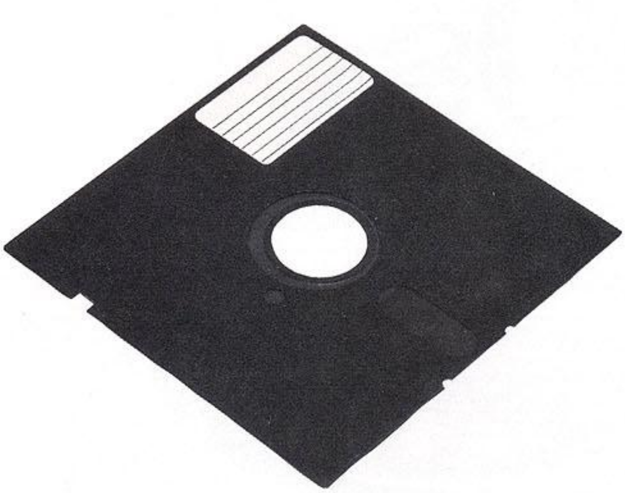
WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

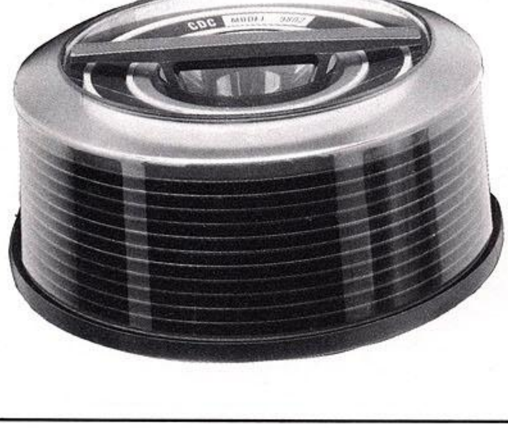
NAME: ______________________________

NAME THE SOFTWARE DEVICES

DIRECTIONS: Look at the software devices below. Write the name of each under its picture. Use the front of the poster for help.


Optical Programming Associates
FUN & GAMES





WORD BOX

Floppy Disk
Hard Disk
Videodisc

Permission granted to reproduce for classroom use. Copyright © 1987 by Scholastic Inc.

COPY

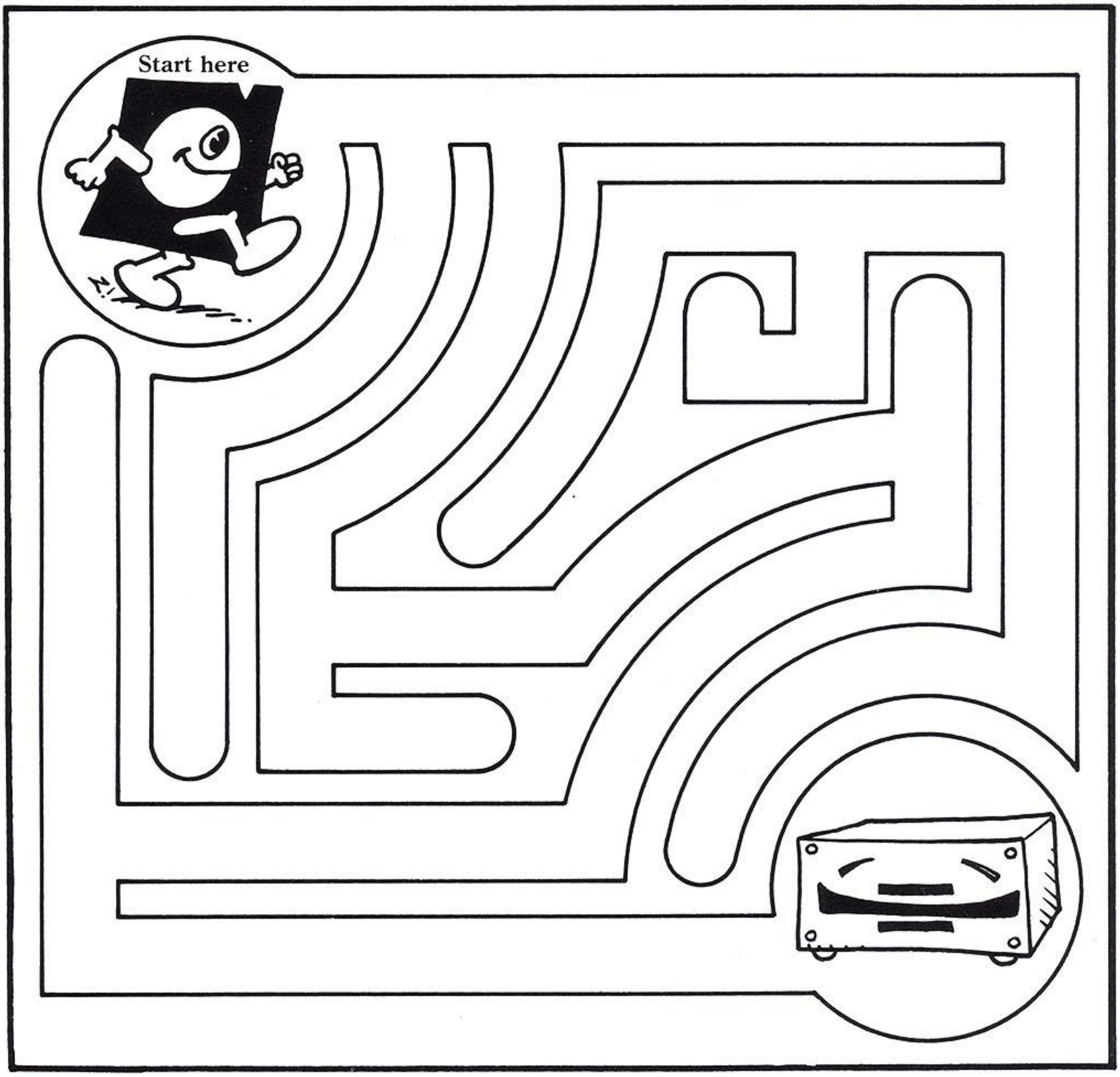
PRIMARY

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

NAME: ______________________________

FLOPPY DISK MAZE

DIRECTIONS: Look at the maze below. Color in the path that takes the floppy disk to its disk drive.



Permission granted to reproduce for classroom use. Copyright © 1987 by Scholastic Inc.

COPY

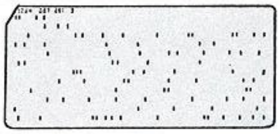
INTERMEDIATE

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

NAME: ______________________________

HISTORY OF SOFTWARE DEVICES

DIRECTIONS: Below is a list of some of the devices that store software. Use references to complete the information categories on each device. The first is done for you.

SOFTWARE DEVICE	APPROX. DATE INVENTED	A COMPUTER THAT HAS USED IT	PICTURE
PUNCHED CARD	1800s	Jacquard's Loom	
PAPER TAPE			
MAGNETIC TAPE REEL			
CASSETTE TAPE			
HARD DISK			
FLOPPY DISK			
LASER VIDEODISC			

Permission granted to reproduce for classroom use. Copyright © 1987 by Scholastic Inc.

COPY

INTERMEDIATE

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

NAME: ____________________

DISK RIDDLE

DIRECTIONS: Each square in the grid below contains a word. If you put the words in the correct order, they will make up a riddle about disks.

Here is how to get the words in the right order:

1. Look at the blanks below the grid. Under each blank, find a pair of numbers. The numbers tell you which square contains the word for that blank.
2. Under the first blank is 2,1. To get to square 2,1, go to the starting arrow. Move 2 squares *across*; then move 1 square *down*.
3. This square says "WHY." "WHY" is the first word of the joke. Write the word "WHY" in the first blank.
4. Use the numbers under the next blank to find the next word of the joke, and so on.

	1	**2**	**3**	**4**
1	FLOPPY	WHY	SAVE	ARE
2	GOOD	COLLECTORS?	LIKE	TO
3	DISKS	BECAUSE	THINGS.	THEY

Write the words to the riddle in these blanks.

____________ **2,1**

____________ **4,1**

____________ **1,1**

____________ **1,3**

____________ **1,2**

____________ **2,2**

____________ **2,3**

____________ **4,3**

____________ **3,2**

____________ **4,2**

____________ **3,1**

____________ **3,3**

Permission granted to reproduce for classroom use. Copyright © 1987 by Scholastic Inc.

The history of the future, part 1.

Surely, you remember the future.

After all, it wasn't that long ago. On our calendar, it started in 1977 with the introduction of the Apple® II personal computer.

In just ten years, the Apple II became the educational standard for computing. Today, there are over one million Apple II's in schools–more than all other personal computers combined.

How did we come so far, so fast?

By listening to your suggestions. By encouraging software developers to produce over 10,000 programs for the Apple II–including most every leading educational software package.

And by constantly evolving our products.

To understand where the Apple II came from is to understand where the Apple II is going.

And to understand more about that, all you have to do is turn the page.

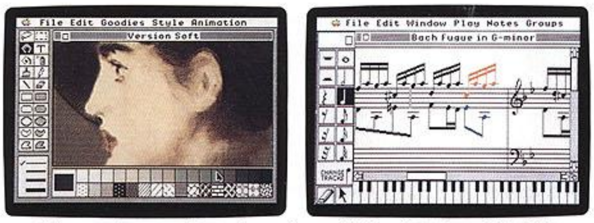
Press
SPACEBAR
cat
but
pit
jet
bat
Delete
Reset
Push DOWN to CLOSE
Push IN to OPEN

The history of the future, part 2.

As our second decade begins, Apple realizes that as your partner in education, we must find ways to make computers an integral part of day-to-day life in all facets of education–whether our users are children, high school students, teachers or administrators. So we'd like to let you in on our plans for the upcoming years.

First, we've updated our educational standard, the Apple IIe. It now has a new keyboard layout with a numeric keypad.

Then, there's the newest addition to the Apple II family–the Apple IIGS.™ A computer which combines all the reliability and expandability of the Apple IIe with some of the most advanced technology to date.


File Edit Goodies Style Animation
Version Soft
File Edit Window Play Notes Groups
Bach Fugue in G-minor

The amazing graphic and sound capabilities of the IIGS will let high school students go as far as their imaginations can take them.

The IIGS comes with a hefty 512K memory and incredible sound and graphic capabilities, which will enable in-depth study of everything from foreign languages to chemistry. Of course, the IIGS still runs the existing base of Apple II software (up to three times faster than before).

To help you fit the Apple II into your lesson plans, there are Apple's new Curriculum Software Reference Guides–in Science, Math, and Reading, Writing and Language Arts.

And there have been some impressive strides in software

File Help Function Search Path
BIOME
RAIN FOREST
Thousands of species of broad leaved everg
the rain forest biome. It is usually hot al
rubber plants,
variety of anim
snakes, and cro
8 / 9
LEMUR
Apple IIGS

technology. Teachers and students can now have everyday access to entire encyclopedias stored on compact disks and retrievable on Apple II's.

To further integrate Apples into everyday life, teachers will be able to make presentations, and students will be able to write reports, that include video and audio examples. All done on Apple II's.

The updated Apple IIe has a new keyboard that's just like the IIGS keyboard.

And Apple, with The National Geographic Society and Lucasfilm Ltd., is working on projects that will allow teachers and students to access a wealth of National Geographic photographs and illustrations, directly on their Apple II screens.

And if you'd like to talk shop (or any other subject) with teachers around the country, we're working on opening the doors to on-line communications that will provide you a forum for exchanging ideas.

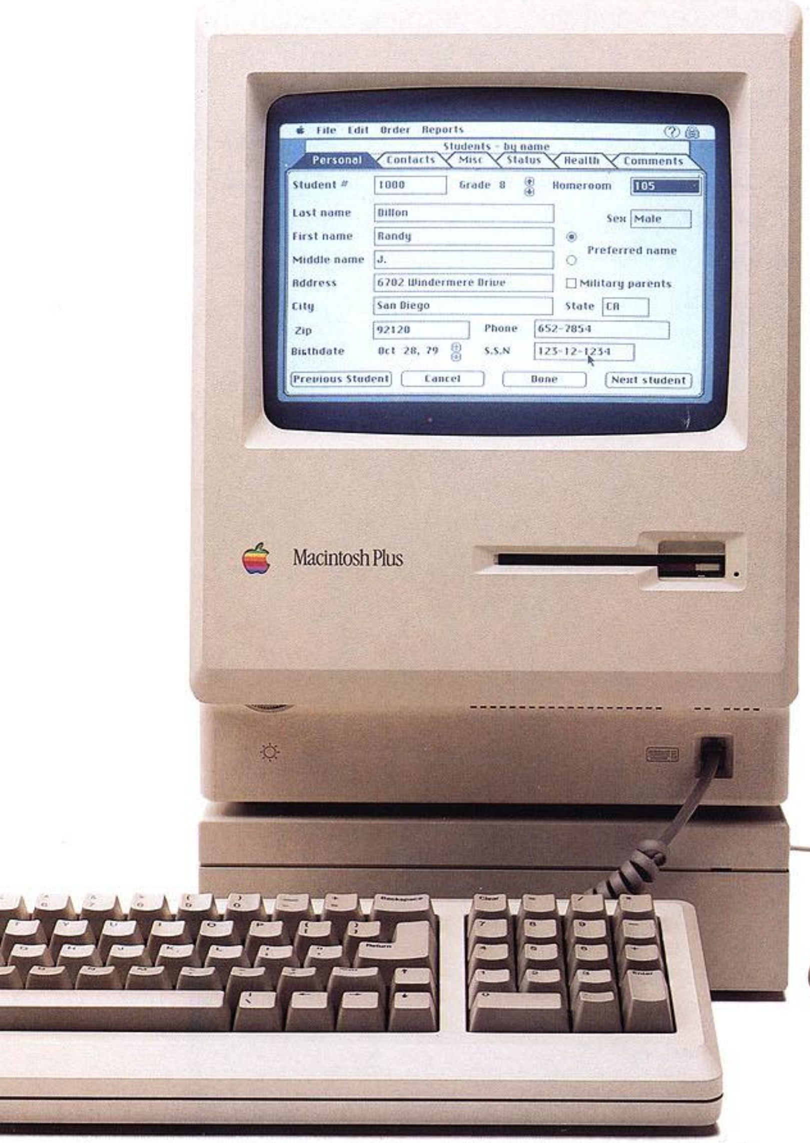
That's where Apple's going in the future, and if you're wondering how to keep track of it all, relax. There's an Apple that can do that, too.

Print Deck List
DECK LIST
SELECT
BIOME
CONIFEROUS FOREST
DECIDUOUS FOREST
DESERT
Push DOWN to CLOSE
Push IN to OPEN
delete
clear
return
shift
enter

How to manage the future.

One of the biggest advantages in deciding on Apple is that we let you choose from a full line of products – from our Apple IIc, IIe, and IIGS, to the Apple which you see before you now.

The one powerful enough to help manage an entire school district.



Student # 1000
Grade 8
Homeroom 105
Last name Dillon
First name Randy
Middle name J.
Sex Male
● Preferred name
○
Address 6702 Windermere Drive
☐ Military parents
City San Diego
State CA
Zip 92120
Phone 652-7854
Birthdate Oct 28, 79
S.S.N 123-12-1234

With a Macintosh Plus and Apple Hard Disk 20SC, a school can be run as efficiently as a business.

The Macintosh™ personal computer.

In case you haven't heard, Macintosh employs intuitive "point and click" mouse technology. So an entire school or district staff can learn to use Macintosh without costly training.

MICROSOFT
Microsoft Excel
MICROSOFT
Microsoft Works
MORE

The best rated business software made runs exclusively on Macintosh.

Macintosh runs the best rated business software on the market. Whether you and your staff need to do spreadsheets on Microsoft® Excel, or outlining and planning on MORE,™ no computer will help your school run more like a business than Macintosh.

And now there's MacSchool,™ a new administrative software package designed to help principals and district level managers take care of everything from tracking attendance rolls to preparing budgets.

With a LaserWriter Plus printer, a Macintosh can print in hundreds of type styles and sizes.

When a LaserWriter® Plus printer is connected to your Macintosh, they form Apple's DeskTop Publishing System. Instantly, you will have the power to produce near-typeset quality text and graphics. You and your staff can create more persuasive presentations, professional looking correspondence, community newsletters and school board presentations.

And, with our DeskTop Publishing System, your students can put out newspapers and magazines that look like they were professionally typeset.

Well, that's as much of the future as we can discuss now. And what about predicting the winner of the '88 presidential race, or a day when all students will show up to class early? We're working on it.

The power to be your best.™

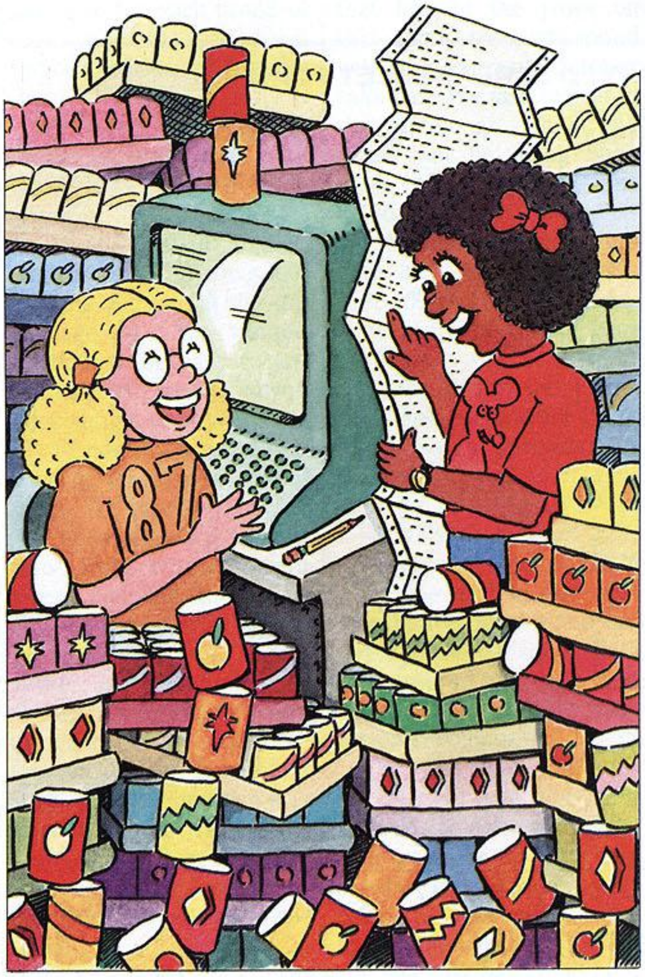
© 1987 Apple Computer, Inc. Apple, the Apple logo and LaserWriter are registered trademarks of Apple Computer, Inc. Macintosh and Apple IIGS are trademarks of Apple Computer, Inc. Microsoft is a registered trademark of Microsoft Corporation. MORE is a trademark of Living VideoText. MacSchool is a trademark of Chancery Software. For an authorized Apple dealer near you, call **(800) 538-9696.** Screens: Reader Rabbit™ from The Learning Company, Information Laboratory Life Science Software™ from Addison-Wesley Publishing Company, Paintworks Plus™ from Activision, Deluxe Music Construction Set™ from Electronic Arts and MacSchool™ from Chancery Software, Ltd.

Advertisement

TAKING CARE OF BUSINESS

BY GREG WOODS

Here's how one class uses spreadsheet, word processing, and graphing software to manage a soda machine business.



Slug Signorino

TODAY, BUSINESSES OF all kinds rely on computers to help keep records, maintain the flow of goods and services, and plan for the future.

One type of computer software that is used widely in business is the electronic spreadsheet, an information table that allows business persons to electronically calculate and keep track of important figures. Business persons also use word processing software, which lets them perform a variety of text-related jobs from writing correspondence to designing forms. A third type of software that is used in the business world is graphing software, which helps business persons design graphs that demonstrate performance and projections in profits, sales, and so forth.

Linked together in a special teaching unit, these three types of software can be used to show elementary school students how basic math and language arts skills are used to manage a business in the real world. Such a teaching unit on business can also help underscore the importance of teamwork, responsibility, and paying careful attention to detail.

That's what Greg Woods' special education students at Horace Mann Middle School in West Allis, Wisconsin, learned when they used their computer to take charge of the school soda machine. Though the students have instructional levels that range from second through fifth grade, Greg managed to design a unit of study in which everyone "profited." In fact, the students continue to profit. The kids are still running the soda machine business—and very successfully at that. Greg tells his story this way. . . .

Last year our school secretary strained her back loading the school's soda machine, so this fall our principal asked me if my class would be willing to carry the soda from the stockroom to the cafeteria, and to load it into the machine.

The suggestion gave me an idea. I had just been trying to think of how to design a teaching unit on the "world of work." Why not organize my unit around the school's soda machine business? Why not have

(continued)

students operate the business themselves? Kids could stock the machine, count the change, keep track of inventory, order more soda by telephone, and use our classroom microcomputer for storing and analyzing all of the related data.

BLANK SPREADSHEET FORM

```
Soda Business                            Sales (cans loaded)

Date  Collected  Paid  Pepsi Pep Lt  M.Dew D.P.Fr  Slice R.Beer Totals

-----------------------------------------------------------------------

Mon  1

Tue  2

Wed  3

Thu  4

Fri  5


Mon  8

(etc.)
```

COMPLETED SPREADSHEET FORM

```
                 Soda Business
                 October, 1985         Sales (cans loaded)

Date  Collected   Paid   Pepsi Pep Lt  M.Dew D.P.Fr  Slice R.Beer Totals
-------------------------------------------------------------------------
Tue  1  $10.45              6       0      4      6      2      4     22
Wed  2  $15.35             14       6      3      9      0      0     32
Thu  3  $19.70  $12.00     20       7      5      6      2      8     48
Fri  4  $28.05             12       1     10      6     12     11     52

Mon  7  $35.15             20       5     18      8      7     12     70
Tue  8  $14.65              6       4      4     10      4      6     34
Wed  9  $14.60  $72.00      7       6      2     10      3      4     32
Thu 10   $8.95              4       2      1      9      0      3     19
Fri 11  $16.85              8       4      9      5      2      6     34

Mon 14  $29.95             24       0      5     16     13      8     66
Tue 15  $18.60              8       5      9      7      4      8     41
Wed 16  $13.55              8       8      5      5      0      4     30
Thu 17  $12.50              5       4      5     12      0      1     27
Fri 18  $16.50             17       7      7      5      3     33     72

Mon 21  $25.95             22       3      6      3      7     15     56
Tue 22   $7.45  $66.00      7       4      3      4      1      0     19
Wed 23  $10.30  $18.00      4       6      4      6      1      3     24
Thu 24  Teacher's Convention                                           0
Fri 25  Teacher's Convention                                           0

Mon 28  Conferences                                                    0
Tue 29  Conferences                                                    0
Wed 30  $56.55             37      19     15     23     12     20    126
Thu 31  $10.15              6       6      6      3      2      0     23

       ------------------------------------------------------------------
Totals  $365.25 $168.00  235      97    121    153     75    146    827
       ------------------------------------------------------------------

Profit  $197.25

Average - Monday Sales     64        Total Sales - Week 1   154
         Tuesday Sales     29                      Week 2   189
       Wednesday Sales     24                      Week 3   236
        Thursday Sales     29                      Week 4    99
          Friday Sales     53                      Week 5   149
```

We used the spreadsheet capabilities of AppleWorks *software to create this spreadsheet form (top). Then, each day, the computer team entered its information. At the end of the month, we entered formulas to add up each column, and printed out the completed spreadsheet (bottom).*

I outlined a plan and presented it to the principal. He gave me an immediate go-ahead, and so, almost before I knew it, my class was in business! The first step was to organize the soda machine "employees."

SODA BUSINESS TEAMS

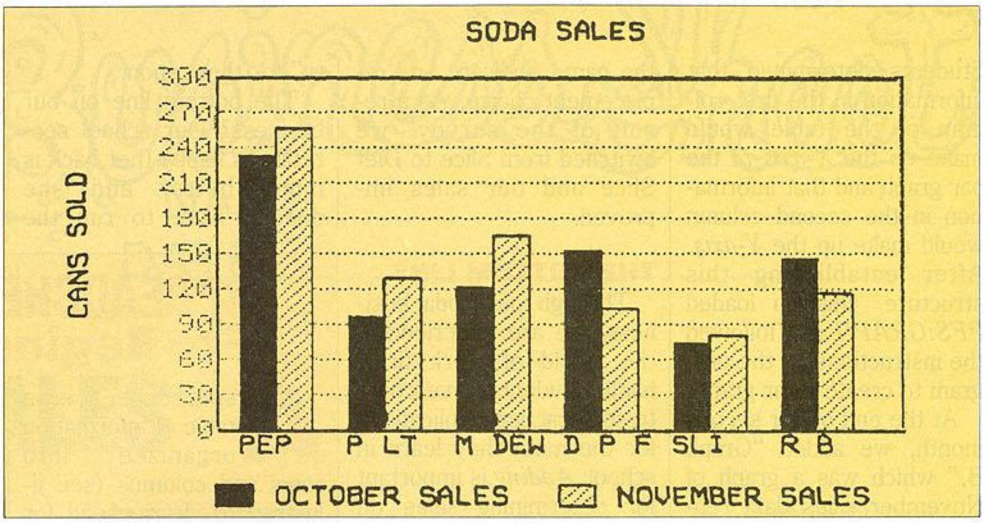
Just as big businesses like IBM or AT&T organize their business people into teams that manage specific operations, I divided my students into several soda business teams and assigned separate responsibilities to each. Here are the teams and their duties.

Soda Teams: I organized a team of three to four students for each brand of soda available in our machine. Each of these teams carries a few six-packs of its soda from the stockroom to the cafeteria, estimates how many cans of its brand were sold out of the machine since loading it the previous day, replaces these cans with ones carried from the stockroom, returns any extra soda to the stockroom, figures its inventory (by subtracting what it just loaded in the machine from yesterday's inventory figure), and double-checks the inventory figure by counting the stock. One member from each team then records its current sales and inventory figures on a form we made on the word processor. We call the form the Business Sheet (see page 37 for a sample copy). The Business Sheet is posted on a classroom bulletin board. We keep the previous day's sheet next to it because we need some of "yesterday's" figures to calculate current inventory numbers.

Machine Team: Gets the key to the soda machine and the moneybag from the office, opens the machine, refills the change machine with nickels (if needed), closes the machine and makes sure it's locked (very important), wraps up the money once it is counted and puts it in the moneybag, and finally, returns the moneybag and key to the office.

Inventory Team: Uses figures on the Business Sheet to keep tabs on the total soda inventory. This includes estimating needs and reordering soda by phone from distributors.

Computer Team: Boots up the Soda Spreadsheet (see "Designing Our Spreadsheet" section for details); uses the Business Sheet to enter into the spreadsheet all daily figures for soda sales, money collected from the soda machine, and money paid to soda distributors. One student then types in a formula that totals the number of all brands (in cans) sold that day and presents the sum in the cell at the far right of the sheet. Team members also use *PFS: GRAPH* to make graphs of monthly spreadsheet results (see "Graphing the Results" section).



We used PFS:GRAPH *to create a graph similar to this one. The graph shows a side-by-side comparison of soda brand sales in the months of October and November. By looking at this visual representation, kids were easily able to identify a leading seller—Pepsi.*

DESIGNING OUR SPREADSHEET

Every class these days has at least one computer fanatic, and mine is named Arnie. Arnie and I had a great time designing a spreadsheet on which to record our sales data. (If you are unfamiliar with electronic spreadsheets, see the sidebar entitled "Spreadsheet Primer.") First, we discussed what data we wanted to record. We decided it would be helpful to have numerical values each day of the week for: (1) the amount of money collected from the machine; (2) the amount of money paid to soda distributors; (3) the number of cans sold for each brand of soda; and (4) the total number of cans (all brands) sold.

We used the spreadsheet capabilities of *AppleWorks* software to incorporate these categories into a spreadsheet outline that contains the rows and columns you see at the top of page 34. We wanted our data to be easy to understand so we narrowed our columns until labels for all 11 desired columns could fit across one screen width. We inserted a blank row between each week's data and, when listing dates, included the name and number of each day of the week.

We used *AppleWorks* software to make our spreadsheet form because it is simple and straighforward, and also because it is what we had. However, you could produce a similar form by using just about any major spreadsheet program.

We saved the blank form to disk under the file name SODAFORM. To keep track of our first month's sales, we made a copy of the blank form and named it OCTOBERSALES. We had to adjust the dates (names and numbers of the days) that formed the rows on this form to correspond with the current October calendar. We also indicated the dates on which we would not be doing business, such as holidays and conference days, by inserting the reason in the cell(s) next to each such date. (See the October spreadsheet at the bottom of page 34.)

Each month we follow the same method for making a sales spreadsheet form.

CREATING A MONTHLY REPORT

At the end of the first month, we drew a line under the spreadsheet data and entered formulas that calculated a monthly total for each column.

Then we drew a line under these totals and used formulas to calculate profit, average sales for each day of the week, and exact sales for each week. We hoped that calculating average sales by day could help us estimate how much soda to carry to the cafeteria on a given day of the week, and that calculating average weekly sales could help us decide when to reorder different soda brands. (See spreadsheet at the bottom of page 34.)

We printed out a copy of this version of our spreadsheet for each student. Children referred to the printout throughout the next month as they made soda business decisions. We called the printout our Monthly Sales Report.

At the end of each month, we continue to create and print out a Monthly Sales Report for classmates.

A GRAPH OF OUR SALES

The Computer Team used data from the first Monthly Sales Report and *PFS:GRAPH* software to produce a bar graph of our sales.

As a first step, the team used paper and pencil to organize data into a simple table. In one column, the team listed the soda brand names; in the second column, the number of cans sold.

SALES DATA TABLE

SODA	CANS SOLD
PEP	6
PEP LT	0
M DEW	4
D P FR	6
SLICE	2
R BEER	4

(continued)

Students determined that information in the first column of the table would make up the *X-axis* of the bar graph and that information in the second column would make up the *Y-axis*. After establishing this structure, children loaded *PFS:GRAPH* and followed the instructions on the program to create a bar graph.

At the end of our second month, we added "Graph B," which was a graph of November sales data represented in striped bars, to the October graph, which had data represented in solid bars (see graph on page 35). This gave us a side-by-side comparison of sales by brand in the months of October and November. By looking at this visual representation, kids were easily able to identify a leading seller—Pepsi.

The Computer Team continues to create graphs that depict sales.

SURVEYING OUR MARKET

The Computer Team was so impressed with its first two-month graph that members printed out a version and taped it on the soda machine where our customers could see it. After studying the chart carefully, the team identified a brand that was not moving. That brand was Slice. Two team members wanted to know if we could switch to a different brand that might sell better. I suggested they conduct a "market survey " to find a brand of soda that the "market" (the student body and faculty) would prefer.

The kids posted a chart on the soda machine. At the top of the chart was a list of possible soda replacements for Slice. The chart provided a space for each customer to print his or her name, and next to the name, indicate one replacement choice. As a result of the survey, we switched from Slice to Diet Slice and our sales improved.

THE BOTTOM LINE

Through our soda business, we are experiencing the world of work firsthand. Students have come to see practical applications for the math they learn in school: *Adding* is important for determining sales (in cans) and for counting the soda money. *Subtracting* is needed to update inventory. *Graphing* is used to understand sales figures. *Estimating* helps stockers load soda cans quickly. *Averaging* helps measure daily sales.

Our business has also been a good vehicle for expressive language development. Many of my students have had the opportunity to order soda, request maintenance for the machine, and even give short business presentations about our sales and our marketing survey.

Most importantly, through the day-to-day running of a small business, kids are learning responsibility. They know they are directly accountable for careful handling of materials, record keeping, and accounting. And they have figured out that teamwork and accuracy can help them meet their responsibilities.

Not every student always acts in a completely responsible manner, however. Occasionally, some kids goof off while loading the machine, taking inventory, or such. I have fired two children already for being rowdy, though I rehired them a week later.

I plan to reward the positive behavior demonstrated by most of my students by hosting a "business party" for them soon.

The bottom line on our business? Our school secretary is happy (her back is much better and she doesn't have to run the soda business any longer); the principal is impressed with the experience students are gaining; and the kids are enjoying the hands-on experience! ■

SPREADSHEET PRIMER

For Beginners Only

A spreadsheet is a table of information organized into rows and columns (see illustration). It is useful for calculating numbers and interpreting information. A spreadsheet can be drawn on paper or created on a computer, using a software program designed for this purpose. A computerized spreadsheet is more efficient than a paper spreadsheet because it can do all calculations automatically and because it allows you to move, erase, and insert characters easily.

In a spreadsheet, each intersection of a row and column forms a *cell*. Cells are identified by letter and/or number coordinates, such as A1 or 2,2. (The column number or letter generally comes first; the row number or letter, second.)

Each cell holds one piece of information. The information can be made up of either words (*labels*), numbers (*values*), or formulas.

Figure 1
Milk Money Collection

	A	B
1		AMOUNT
2	SANDY	0.25
3	PETER	0.50
4	STEPHANIE	0.00
5	TOTAL	B2 + B3 + B4

This simple spreadsheet keeps track of milk money from three students. The formula in cell B5 tells the computer to add the values in B2, B3, and B4.

The sample spreadsheet in Figure 1 keeps track of students' milk money. Cells A2 to A5 and cell B1 hold the labels SANDY, PETER, STEPHANIE, TOTAL, and AMOUNT. Cells B2 to B4 hold the values for the milk money paid ($.25, $.50, and $.00). Cell B5 holds the formula for totaling the milk money paid (B2 + B3 + B4). The formula tells the computer to add up the values in cells B2, B3, and B4. (In many spreadsheet programs, formulas are preceded by a symbol, such as a + sign or an = sign. Formulas may vary in other ways.)

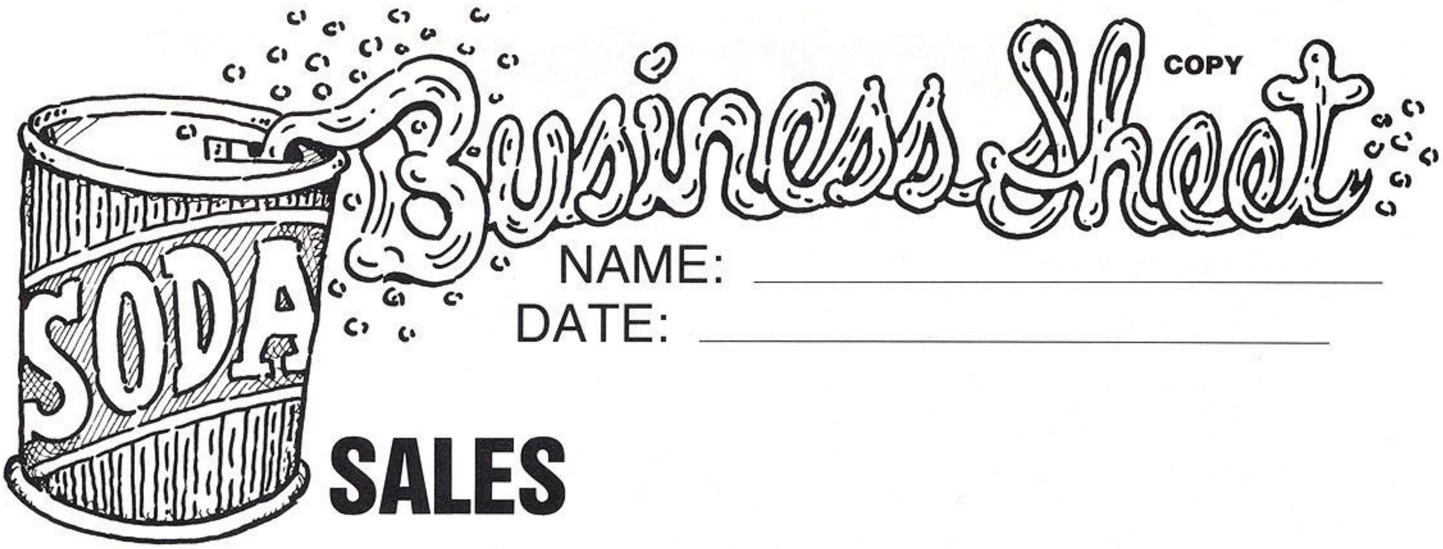
As soon as the formula is entered, the computer makes the calculation and displays the result in cell B5. (See Figure 2.)

Figure 2
Milk Money Collection

	A	B
1		AMOUNT
2	SANDY	0.25
3	PETER	0.50
4	STEPHANIE	0.00
5	TOTAL	0.75

Once the formula is entered, the computer automatically makes the calculation and shows the answer in cell B5.

If you change any of the values in cells B2, B3, or B4, the computer will automatically recalculate the total and display the new total in place of the old total in cell B5. For example, if Stephanie gives you $.50 for milk, you enter the amount in cell B4. The computer adds $.25, $.50, and $.50 to get the new total of $1.25.



COPY

Business Sheet

NAME: ______________________

DATE: ______________________

SALES

	Number of cans:		Number of cans:
Pepsi	______	**Diet Pepsi Free**	______
Pepsi Lite	______	**Slice**	______
Mountain Dew	______	**Root Beer**	______

DELIVERIES

	Number of cans:		Number of cans:
Pepsi	______	**Diet Pepsi Free**	______
Pepsi Lite	______	**Slice**	______
Mountain Dew	______	**Root Beer**	______

INVENTORY

	Number of cans:		Number of cans:
Pepsi	______	**Diet Pepsi Free**	______
Pepsi Lite	______	**Slice**	______
Mountain Dew	______	**Root Beer**	______

Permission granted to reproduce for classroom use. Copyright © 1987 by Scholastic Inc.

WRITER'S CORNER

WORD PROCESSING TASK CARDS

Story Plots

TEACHER'S NOTES

Each month the "Writer's Corner" column supplies you with four student activity cards that provide practice with creative writing skills. A different element of creative writing is explored each month. This month, for example, we focus on how to create interesting story plots.

Each column requires you to create a data file. You may want to save the files each month on the same diskette.

PREPARATION

1. Cut out and laminate the four task cards on the pages that follow.
2. Using a word processor, type the data file that appears on this page.
3. Save the file on a diskette under the file name PLOT.
4. Before you have your students use this month's task cards, you may first want to teach or review these terms: *plot, characters, outline, details, description, dialogue.*
5. Your students will also need to know how to use your word processing program to INSERT, DELETE, and MOVE text.

TASK CARD ACTIVITIES

Task Card 1: Children arrange a series of sentences in a logical sequence. *(Answer: When I woke up this morning, I knew it was going to be a hot day. I decided to go to the beach. I packed a beach bag with a sandwich, a towel, and suntan lotion. Then I left my house. When I got to the beach, the first thing I did was build a sand castle. After I made the sand castle, I decided to spread my towel out and rest. When I spread my towel out on the sand, out jumped my kitten, Oodles.*

Task Card 2: Students provide an ending to a plot outline about Oodles the kitten.

Task Card 3: Children create a plot outline for a story they would like to write. Story suggestions are given.

Task Card 4: Children write a story using the outline created in the last activity. ■

BY JACKIE GLASTHAL

PLOT DATA FILE

SECTION #1:
DIRECTIONS: Marjorie Mixup is trying to tell you about a day she spent at the beach. What she is saying is all mixed up, though. See if you can help her out. Use the MOVE *command in your word processing program to rearrange the order of the sentences so that they make sense.*

WHEN I SPREAD MY TOWEL OUT ON THE SAND, OUT JUMPED MY KITTEN, OODLES.

AFTER I MADE THE SAND CASTLE, I DECIDED TO SPREAD MY TOWEL OUT AND REST.

I PACKED A BEACH BAG WITH A SANDWICH, A TOWEL, AND SUNTAN LOTION.

I DECIDED TO GO TO THE BEACH.

WHEN I GOT TO THE BEACH, THE FIRST THING I DID WAS BUILD A SAND CASTLE.

WHEN I WOKE UP THIS MORNING, I KNEW IT WAS GOING TO BE A HOT DAY.

THEN I LEFT MY HOUSE.

SECTION #2:
DIRECTIONS: Read the list of events, or plot outline, that follows. This time all the events are in the correct order. But there is no ending. What do you think might happen next? Type in your answer after the number 5.

PLOT OUTLINE
1. MARJORIE'S KITTEN, OODLES, RAN TOWARD THE WATER.

2. OODLES SAW THAT A MEAN-LOOKING DOG WAS SWIMMING TOWARD SHORE.

3. OODLES DUG A HOLE IN THE SAND TO HIDE FROM THE DOG.

4. THE DOG GOT OUT OF THE WATER. IT STARTED TO SNIFF AROUND THE HIDING PLACE.

5.

SECTION #3:
DIRECTIONS: Write a plot outline for a story you would like to write. If you can't think of a story to write about, select one of the story ideas below. Use the plot outline in Section #2 as a model.

STORY IDEAS:
"The Day I Found A Million Dollars"
"The First Time I Tried to Bake a Cake"
"How I Caught a Fish in an Unsual Way"
"How I Saved My Best Friend's Life"
"A Very Exciting Vacation Story"

Begin the plot outline for your story here:

Use a word processing program to create the file above.

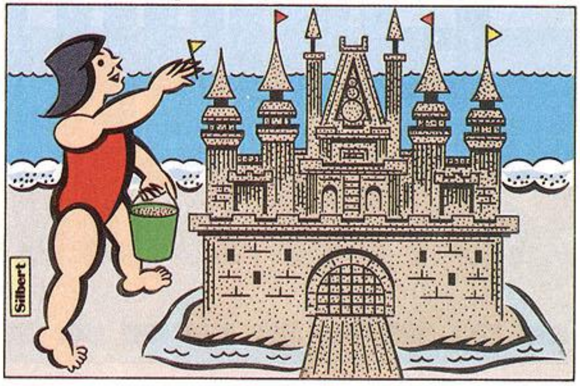
WRITING 1

TOPIC: PLOT

Comes First Which?

It's always fun to hear stories, right? That goes without saying. But what if someone is telling you a story and you suddenly realize that he or she is not telling the events of the story in correct order? You wouldn't enjoy *that* story very much, would you? You would probably feel (especially if it's a long story) very confused. "This story sounds like it might be pretty good," you think. "I sure wish that I knew what was going on!"

1. Boot up your word processing program. Load the data disk, and call up the PLOT data file.
2. Read Section #1 in the data file. Marjorie Mixup is trying to tell you a story about a day she spent at the beach. Everything she says is all mixed up, though. Her sentences do not follow one another in a logical order. See if you can help her out. Use the MOVE command in your word processing program to rearrange the sentences so that the order in which the events occur makes sense.
3. Check your answer with your teacher.
4. Save your work on a blank disk. We will call this disk your personal disk.



WRITING 2

TOPIC: PLOT

What Happened?

Complete Task Card 1 before you try the activity on this card.

If you have ever been sent to bed before the end of a good television show, you know the feeling of missing out on an ending. Endings are very important. They are also fun to write. In this activity, you have a chance to do just that—come up with the ending to a story.

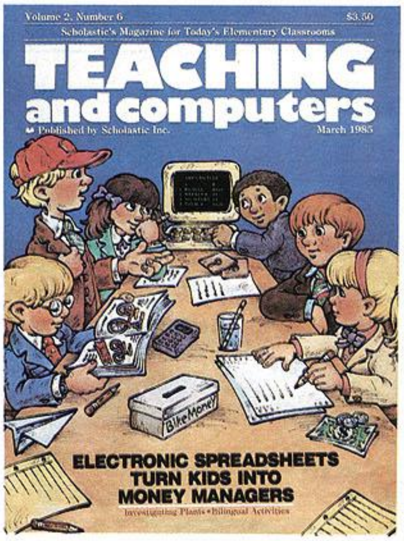
1. Boot up your word processing program. Load the data disk and call up the PLOT data file.
2. Read the list of events given in Section #2 of the data file. The events are listed in order. What do you think might happen next? Type your answer in the space provided.
3. Save your work on your personal disk.

Bill Silbert

Next time, ☑ check the Group Rate box and save money!

It's true.

When five or more teachers subscribe together to TEACHING AND COMPUTERS, there are lots of advantages.


Volume 2, Number 6
$3.50
Scholastic's Magazine for Today's Elementary Classrooms
TEACHING
and computers
Published by Scholastic Inc.
March 1985
Bike Money
ELECTRONIC SPREADSHEETS TURN KIDS INTO MONEY MANAGERS
Investigating Plants • Bilingual Activities

☑ No more sharing the monthly pull-out posters…or discovering that they are missing from the copy you just borrowed.

☑ Now you can use the Halloween, Thanksgiving, or Valentine's Day activities, and then file them away for reusing another year, without feeling guilty!

☑ You can make a permanent Computer Corner collection of Task Cards and Challenge Cards for your own classroom by cutting them out each month and laminating them.

☑ And you save money!

Our regular one-year subscription rate is $19.95. But our Group Rate is just $11.95.

So think about it. Talk about it with other computer-using teachers in your school.

Then, when it comes time to renew your TEACHING AND COMPUTERS subscription, check the Group Rate box. (Remember: five is the minimum for the $11.95 rate and all Group Rate copies are sent to one person each month for distribution.)

Our money-saving Group Rate:

One more way we're working for today's classroom teachers.

Scholastic
TEACHING and computers®
PO Box 2040 • Mahopac, NY 10541

WRITING 3

TOPIC: PLOT

Outline A Plot

Complete Task Card 2 before you try the activity on this card.

There is a special name for the events in a story. Together, they are called the story's *plot.* How do writers create plots for their stories? Some writers think about something that happened to them or to someone they know. Other times the writer just looks into his or her imagination and makes something up.

When a writer makes a list of events he or she wants to have happen in a story, the writer is creating a *plot outline*. Writers are careful about what events go into their stories. They are also careful about the order that the events are in.

1. Boot up your word processing program. Load the data disk and call up the PLOT data file.
2. Look at Section #3 in the data file. In this space, write a plot outline for a story. Five story ideas are given. Select one of these or make up your own story idea. Remember to list your events in order and to use complete sentences. Use the plot outline in Section #2 as a model.
3. Save your work on your personal disk.

WRITING 4

TOPIC: PLOT

Color In The Details

Complete Task Card 3 before you try the activity on this card.

Once a writer has created a plot outline, he or she is ready to turn the plot outline into a story. The writer does this by giving *details* about each of the events in the story. A plot outline for a writer is like a sketch is for a painter. After making a sketch, the artist then goes back and colors in details. The picture is not ready to be shown to friends or hung on the wall until the details are colored in.

1. Boot up your word processing program. Load the data disk and call up the PLOT data file.
2. Go back to the outline you created in Section #3 of your data file. Press the RETURN key two or three times between each sentence in your outline. Use this empty space between the sentences to add details to your story. These details will turn your story outline into a story. Some of the details you may want to add include dialogue, character descriptions, and descriptions of the setting.
3. Save your work on your personal disk.

MICRO IDEAS

QUICK COMPUTER TIPS AND ACTIVITIES

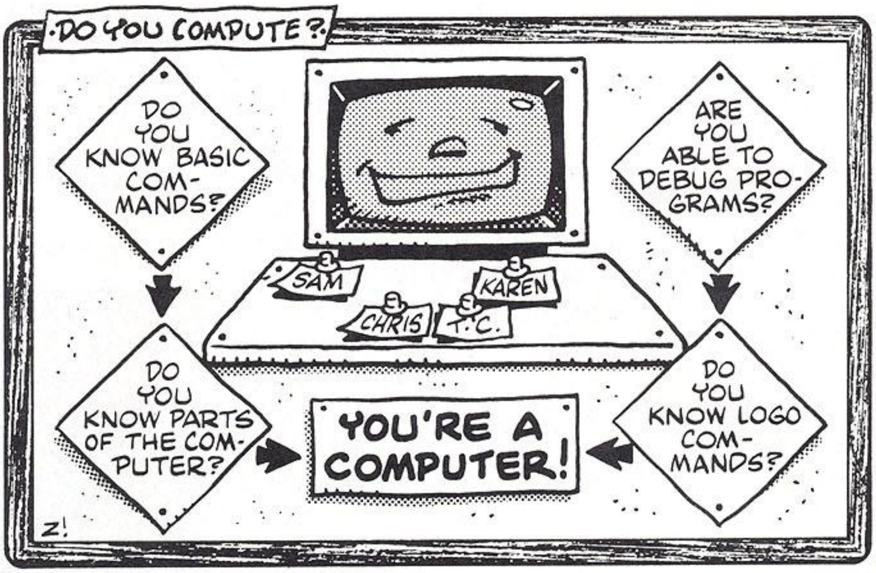
COMPUTER GAME AND BULLETIN BOARD

Here's a bulletin board that you can use any time of year. I have found that it helps motivate students to learn more about the computer and programming.

Construct a computer out of paper, omitting the keys. Tack it up in the center of a bulletin board already covered with construction paper of a contrasting color.

Arrange diamond-shaped flowchart symbols on the bulletin board to the right and left of your paper computer. On each symbol write a general question about computer literacy such as "Do you know BASIC commands?" and "Are you able to debug programs?" Cut a rectangular flowchart symbol out of another color construction paper. Write within it the words "You're a Computer!" Place it on the bulletin board underneath your paper computer. Staple arrow symbols onto the bulletin board between the diamond-shaped symbols so that they all lead to this rectangular one.

At the top left of the bulletin board hang a small sign with the question "Do You Compute?" written on it.


DO YOU COMPUTE?
DO YOU KNOW BASIC COM-MANDS?
ARE YOU ABLE TO DEBUG PRO-GRAMS?
SAM
KAREN
CHRIS
T.C.
DO YOU KNOW PARTS OF THE COM-PUTER?
YOU'RE A COMPUTER!
DO YOU KNOW LOGO COM-MANDS?
Z!

Challenge your students to add their own personalized "key" to a giant keyboard display.

Have each child in your room create a computer key shape out of colored construction paper. Each child should write his or her name on a key. Now go around the room asking each student one computer-related question such as "What is a program bug?" or "What is the difference between a PRINT and an INPUT statement?" If a student answers correctly, allow the child to go to the bulletin board and tack his or her name key anywhere on the paper keyboard that he or she wishes. If the child answers incorrectly, he or she must wait and try answering another question correctly after everyone else has had a turn. Play the game until every student has placed his or her name key on the board.

Laura C. Bullock
Peoria, IL

PROGRAM GENERATES MULTIPLICATION GRIDS

A fellow math teacher asked me to write a BASIC program for him that would generate multiplication grids with answers written in. Rather than make up a new multiplication chart each week, he uses the grids to make up the multiplication tables for him. Students seem to enjoy studying multiplication more this way. They also enjoy using the computer to construct their own multiplication grids to study from.

My program, at right, designed to run on any Apple II series computer hooked up to a printer, gives you a choice of entering 20 numbers of your own (10 across and 10 down) or having the computer randomly select the numbers for you. If you opt for the latter, the program asks you to input the highest numbers you would want to multiply. Do not select numbers with a product greater than three digits. This will throw the grid pattern out of alignment.

```
 X    1    2    3    4    5    6    7    8    9   10

 1    1    2    3    4    5    6    7    8    9   10
 2    2    4    6    8   10   12   14   16   18   20
 3    3    6    9   12   15   18   21   24   27   30
 4    4    8   12   16   20   24   28   32   36   40
 5    5   10   15   20   25   30   35   40   45   50
 6    6   12   18   24   30   36   42   48   54   60
 7    7   14   21   28   35   42   49   56   63   70
 8    8   16   24   32   40   48   56   64   72   80
 9    9   18   27   36   45   54   63   72   81   90
10   10   20   30   40   50   60   70   80   90  100
```

```
  X    9    3    7    5    1    6    4    2    8   10

  8   72   24   56   40    8   48   32   16   64   80
 10   90   30   70   50   10   60   40   20   80  100
  2   18    6   14   10    2   12    8    4   16   20
  7   63   21   49   35    7   42   28   14   56   70
  3   27    9   21   15    3   18   12    6   24   30
  4   36   12   28   20    4   24   16    8   32   40
  5   45   15   35   25    5   30   20   10   40   50
  6   54   18   42   30    6   36   24   12   48   60
  1    9    3    7    5    1    6    4    2    8   10
  9   81   27   63   45    9   54   36   18   72   90
```

Multiplication Grids: *These grids were created with the program listing on page 43. In the lower grid, numbers to be multiplied were randomly selected by the computer.*

(See program listing at right.)

Ron Zalme

Circle 15 on Product Info Card.

MICRO IDEAS

PROGRAM LISTING FOR MULTIPLICATION GRIDS

Use this listing to create multiplication grids like those displayed on the bottom of page 42.

```
1  REM FILENAME: X.GRID
10 D$ =  CHR$ (4):BELL$ =  CHR$ (7):S$ = "            ": REM 12 SPACES
20  TEXT : HOME
30  INVERSE : HTAB 7: PRINT "10 X 10 MULTIPLICATION GRID": PRINT : HTAB 16
     : PRINT "GENERATOR": NORMAL
40  VTAB 8: HTAB 8: PRINT "<1> INPUT ACROSS/DOWN NOS."
50  VTAB 11: HTAB 8: PRINT "<2> RANDOM ACROSS/DOWN NOS."
60  VTAB 14: HTAB 8: PRINT "<3> QUIT"
70  VTAB 19: HTAB 1: PRINT "WHICH? < >": VTAB 19: HTAB 9: GET MENU$:MENU =
      VAL (MENU$): IF  NOT (MENU) OR MENU > 3 THEN  VTAB 19: HTAB 1: CALL
       - 958: GOTO 70
80  ON MENU GOTO 120,280,770
90  REM -----------------
100  REM INPUT ACROSS/DOWN
110  REM -----------------
120  HOME :HA = 10:HD = 10: GOSUB 1000: PRINT BELL$
130  INVERSE : PRINT "ACROSS NUMBERS": PRINT : PRINT : NORMAL
140  FOR X = 1 TO 10
150  IF X < 10 THEN  HTAB 2
151  IF X > 9 THEN  HTAB 1
152  IF X > 99 THEN  HTAB 0
160  PRINT X;" ==> ";: INPUT "";A(X)
170  NEXT
180  HOME : PRINT BELL$
190  INVERSE : PRINT "DOWN NUMBERS": PRINT : PRINT : NORMAL
200  FOR X = 1 TO 10
210  IF X < 10 THEN  HTAB 2
211  IF X > 9 THEN  HTAB 1
212  IF X > 99 THEN  HTAB 0
220  PRINT X;" ==> ";: INPUT "";D(X)
230  NEXT
240  GOTO 540
250  REM ------------------
260  REM RANDOM ACROSS/DOWN
270  REM ------------------
280  HOME :R =  RND ( - ( PEEK (78) +  PEEK (79) * 256))
290  VTAB 9: INPUT "HIGHEST ACROSS NUMBER: ";HA
300  IF HA < 10 THEN HA = 10
310  VTAB 11: INPUT "HIGHEST DOWN NUMBER: ";HD
320  IF HD < 10 THEN HD = 10
330  GOSUB 1000
340  HOME : VTAB 10: PRINT "PLEASE WAIT.": VTAB 12: PRINT "GRID NUMBERS AR
       E BEING SELECTED..."
350  FOR B = 1 TO HA
360 X =  INT ( RND ( PEEK (78) +  PEEK (79) * 256) * (HA + 1))
370  IF  NOT X THEN 360
380  FOR C = 1 TO HA - 1
390  IF X = A(C) THEN C = HA - 1: NEXT : GOTO 360
400  NEXT
410 A(B) = X
420  NEXT
430  FOR B = 1 TO HD
440 Y =  INT ( RND ( PEEK (78) +  PEEK (79) * 256) * (HD + 1))
450  IF  NOT Y THEN 440
460  FOR C = 1 TO HD - 1
470  IF Y = D(C) THEN C = HD - 1: NEXT : GOTO 440
480  NEXT
490 D(B) = Y
500  NEXT
510  REM ----------
520  REM PRINT GRID
530  REM ----------
540  HOME : VTAB 12: INPUT "TURN PRINTER ON & PRESS <RETURN> ";A$
550  FOR D = 1 TO 10
560  FOR A = 1 TO 10
570 P(A,D) = A(A) * D(D)
580  NEXT
590  NEXT
600  PRINT D$;"PR#1"
620  HTAB 2: PRINT "X";
630  FOR X = 1 TO 10
640  PRINT  SPC( 2);:NUM$ =  STR$ (A(X)): GOSUB 1020
650  NEXT : PRINT
660  FOR D = 1 TO 10
670  FOR A = 1 TO 10
680  IF D(D) < 10 THEN  HTAB 2
681  IF D(D) > 9 THEN  HTAB 1
682  IF D(D) > 99 THEN  HTAB 0
690  IF A = 1 THEN  PRINT D(D);
700  PRINT  SPC( 2);:NUM$ =  STR$ (P(A,D)): GOSUB 1020
710  IF A = 10 THEN  PRINT
720  NEXT
730  NEXT
740  PRINT D$;"PR#0"
750  HOME : VTAB 12: PRINT "ANOTHER GRID? <Y><N>: < >";: HTAB 24: GET YN$:
      IF YN$ <  > "Y" AND YN$ <  > "N" THEN 750
760  IF YN$ = "Y" THEN  RUN
770  HOME : PRINT "BYE": END
1000  DIM P(HA,HD),A(HA),D(HD)
1010  RETURN
1020 NUM$ =  RIGHT$ (S$ + NUM$,4): PRINT NUM$;: RETURN
```

Mike Mitchell
Conroe, TX

(continued)

F AT LAST! C

Educational Software Reviews Written By Teachers For Teachers

@Micro is the tool with which a professional educator can successfully dig out from under the mounting heap of software to attain short and long term learning objectives with the right disks in hand

'87/88 ACADEMIC YEAR EDITION
250 all new evaluations
(this is not a compiled edition!)
$25.00

'86/87 ACADEMIC YEAR EDITION
over 300 evaluations
$25.00

'87/88 ACADEMIC YEAR EDITION
'86/87 ACADEMIC YEAR EDITION
$45.00

10% discount ten orders or more

FCIC pays postage

CHECKS PAYABLE TO
FCIC
Box A
University of South Florida
College of Education
Tampa, Florida 33620

I @Micro C

NOW USE BOTH SIDES OF YOUR DISKETTE!

5¼" DISKETTE HOLE PUNCH

WITH HOLE GUIDE and EDGE GUIDE

PUNCH OUT IS ALWAYS IN THE RIGHT POSITION
Available for IMMEDIATE Shipment
only $10.00 EACH add $2.00 EACH shipping
CHECK OR MONEY ORDER

5¼" DISKETTES
DOUBLE SIDED/DOUBLE DENSITY
Each Diskette 100% Certified

59¢ each
5¼ Double Sided Double Density
MIN. ORDER 100
+ $3.40 UPS

or 50 for 65¢ + U.P.S. $2.00
(Includes: Tyvek Sleeves, Labels, Tabs & Hubs)
Check or Money Order –
C.O.D. add $3.00

Order 250 Units and UPS only is FREE in 50 US & CANADA

EXTRA WRITE PROTECT TABS
100 for $1 Prpd.

N.P.S.Inc. Dept. CA (215) 884-6010
1138 BOXWOOD RD JENKINTOWN, PA 19046 WA3IFQ

Circle 16 on Product Info Card.

MICRO IDEAS

MAKE A CREATURES FLIP BOOK

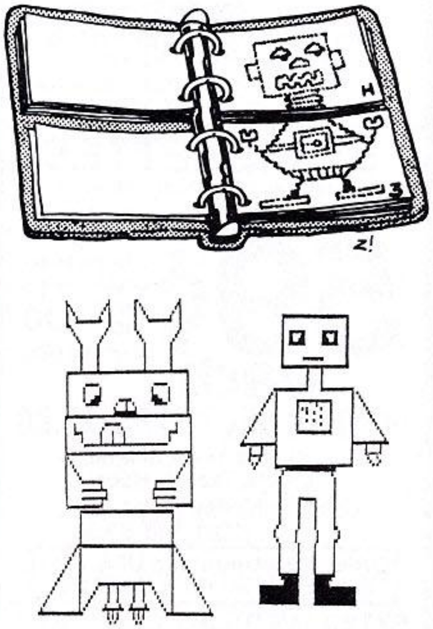
Using *Print Shop* with the file on *Print Shop Companion* called GRAPHIC EDITOR +, a group of students in my sixth grade class created a Creatures Flip Book that the entire elementary school now uses for creative writing projects.

The students divided themselves into two groups: one to design creature heads, the other to design creature bodies. The creature parts were then inserted into a four-ring binder notebook as shown (creature heads in the top two rings; bodies in the bottom two rings). Each head illustration was given a code letter and each body illustration a code number.

When they have free time, children borrow the book and "flip" through it, selecting a creature (a combination of a top and bottom) to describe or write a story about. Children indicate on their papers the creature that they have selected. A paper about the monster shown below, for example, would be labeled H3.

If your school does not own *Print Shop* software, this project will also work with creatures created from Logo or BASIC graphics.

Carolyn Mennen
Michigantown, IN



With just the flip of a page or two, kids can create many creatures.

FREE PRODUCT INFORMATION

This section is designed to help you learn more about the products and services available from our advertisers. Because it is arranged by product category, this section will allow you to compare products and services more easily. To receive information on all the products listed in a category, please circle the appropriate number on the easy-to-use Product Information Card on the opposite page. The numbers for each category are identified under the "Free Comparative Information" heading below.

Free Comparative Information

To receive information from all of the **software** advertisers listed below, **circle 1** on the Product Information Card.

To receive all information listed below concerning **services, circle 2** on the Product Information Card.

SOFTWARE

For information from all software advertisers, circle number 1 on the Product Information Card. For information from individual advertisers, circle the numbers indicated below.

C & C Software: See our ad on page 45. Circle number 18 on the Product Information Card.

FCIC: See our ad on page 43. Circle number 15 on the Product Information Card.

Midwest Software: See our ad on page 49. Circle number 21 on the Product Information Card.

NPS: See our ad on page 43. Circle number 16 on the Product Information Card.

Random House: See our ad on page 7. Circle number 13 on the Product Information Card.

Springboard: See our ad on cover 2. Circle number 11 on the Product Information Card.

HARDWARE

Apple Computer: See our ad on pages 25 – 28.

SERVICES

For information on all services advertised in this issue, circle number 2 on the Product Information Card.

Assoc. Independent Micro Dealers: See our ad on page 45. Circle number 17 on the Product Information Card.

TEACHING and computers

March 1987
(Expires July 1)

PRODUCT INFORMATION

Use this card for free product information.

Name____________________

Title/Responsibility____________________

School/Institution____________________

Address____________________

City__________ State______ Zip Code______

Phone (   )____________________

Please check an entry for each category.

1. What is your primary involvement with Computer Hardware?
a. ☐ Recommend type/brand
b. ☐ Approve purchase
c. ☐ Both of the above

2. What is your primary involvement with Computer Software?
a. ☐ Identify need
b. ☐ Recommend program
c. ☐ Approve purchase
d. ☐ All of the above

3. Do you purchase computing products at:
a. ☐ Computer Retailer
b. ☐ Educational Dealer
c. ☐ Catalog
d. ☐ Mass merchandiser

4. Do you recommend to students and parents?
Yes ☐ No ☐

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150

TEACHING and computers

March 1987
(Expires July 1)

PRODUCT INFORMATION

Use this card for free product information.

Name____________________

Title/Responsibility____________________

School/Institution____________________

Address____________________

City__________ State______ Zip Code______

Phone (   )____________________

Please check an entry for each category.

1. What is your primary involvement with Computer Hardware?
a. ☐ Recommend type/brand
b. ☐ Approve purchase
c. ☐ Both of the above

2. What is your primary involvement with Computer Software?
a. ☐ Identify need
b. ☐ Recommend program
c. ☐ Approve purchase
d. ☐ All of the above

3. Do you purchase computing products at:
a. ☐ Computer Retailer
b. ☐ Educational Dealer
c. ☐ Catalog
d. ☐ Mass merchandiser

4. Do you recommend to students and parents?
Yes ☐ No ☐

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150

TEACHING and computers

March 1987
(Expires July 1)

PRODUCT INFORMATION

Use this card for free product information.

Name____________________

Title/Responsibility____________________

School/Institution____________________

Address____________________

City__________ State______ Zip Code______

Phone (   )____________________

Please check an entry for each category.

1. What is your primary involvement with Computer Hardware?
a. ☐ Recommend type/brand
b. ☐ Approve purchase
c. ☐ Both of the above

2. What is your primary involvement with Computer Software?
a. ☐ Identify need
b. ☐ Recommend program
c. ☐ Approve purchase
d. ☐ All of the above

3. Do you purchase computing products at:
a. ☐ Computer Retailer
b. ☐ Educational Dealer
c. ☐ Catalog
d. ☐ Mass merchandiser

4. Do you recommend to students and parents?
Yes ☐ No ☐

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150

Isn't it time you got your own copy each month!

YES! want my own subscription to TEACHING & COMPUTERS, at the money-saving introductory rate.

TEACHING
and computers
SPREADSHEETS
INTO
MANAGERS

☐ **Send me a year's worth:** Just $16.95 for 6 monthly issues.
(Reg. rate: $19.95)

☐ **Send me a group's worth:** Just $11.95 when I order 5 or more subscriptions, to share.

Number of subs: ____

Special Introductory Rate!

My Name____________________

Title____________________

School____________________

School Address____________________

City__________ State______ Zip______

Signature____________________

If above is NOT your school address, please indicate school name and zip here:

School Name____________________ Zip______ H9703

In Canada, prices higher. Contact Scholastic, Richmond Hill, Ont. L4C 3G5.

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 217 CLINTON, IOWA 52735

POSTAGE WILL BE PAID BY ADDRESSEE

Scholastic Inc.
P.O. Box 2580
Clinton, Iowa 52735-2580

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 217 CLINTON, IOWA 52735

POSTAGE WILL BE PAID BY ADDRESSEE

Scholastic Inc.
P.O. Box 2580
Clinton, Iowa 52735-2580

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 217 CLINTON, IOWA 52735

POSTAGE WILL BE PAID BY ADDRESSEE

Scholastic Inc.
P.O. Box 2580
Clinton, Iowa 52735-2580

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 176 MAHOPAC, NY

POSTAGE WILL BE PAID BY ADDRESSEE

TEACHING AND COMPUTERS
Scholastic Inc.
P.O. Box 2040
Mahopac, NY 10541-9963

MICRO IDEAS

THE LOGO/RAINBOW CONNECTION

If you have a color monitor and Logo software, you can give your students a bit of ol' Irish folklore this St. Patrick's Day (March 17) in the form of a Logo program listing.

Load Logo into your computer. (The program below was designed for Krell Logo, but with slight alterations, should work with any version of Logo that you use.) Then type the program into the computer and save it on a blank diskette. Run the program. What you will see are the colors of the rainbow followed by a pot of gold at the end.

To accompany this program, you may want to read to your students an Irish folktale about a pot of gold at the end of the rainbow. There are many. One good example is found in *At the Butt End of a Rainbow and Other Irish Tales* by Claire Warner Livesey (Harvey House, Inc; Irvington-on-Hudson, NY; 1970).

As a Logo programming challenge, see if children can make the nuggets of gold disappear one by one, just as they appeared. Advanced programmers might also try drawing arcs of rainbow colors across the screen to the pot.

```
TO RAINBOW
  REPEAT 3 [BG 0 BG 1 BG 2 BG 3 BG 4
BG 5]
  ARCL 1 180 PC 4
  RT 90
  REPEAT 3 [POLY 5 45 RT 15 PU FD 11
PD]
  REPEAT 10 [POLY 5 45 LT 11 PU FD 11
PD]
  REPEAT 14 [POLY 5 45 RT 9 PU BK 11
PD]
  POLY 5 45 LT 9 PU FD 11 PD
  PC 1 LT 50 FD 120 HT
  PR [LOOK! A POT OF THE GOLD AT
THE END]
  PR [OF THE RAINBOW -- JUST WHERE
IT BELONGS!]
END

TO ARCL :S :N
  REPEAT :N [BK :S LT 1]
END

TO POLY :S :A
  REPEAT 360/ :A [FD :S RT :A]
END
```

Marilyn Siegel
New York, NY ■

Circle 18 on Product Info Card.

SEND FOR FREE BROCHURE OR PREVIEW AGREEMENT!

ALL OF THE ABOVE

Powerful, but easy to use. A complete system for creating quizzes and study guides you'll have to try to believe.

- Choice of Formats
- On-screen Documentation
- On Computer or In Printed Form
- Complete Editing Features $90*

From the KIDS' CORNER

MAGIC CRAYON $45*
LEARNING ABOUT NUMBERS $50*
LETTERS AND FIRST WORDS $60*

*All prices include back-up disk.

C & C SOFTWARE

5713 KENTFORD CIRCLE • WICHITA, KS 67220
(316) 683-6056

Software for Apple II series computers.
Apple is a registered trademark of
Apple Computer Company.

Circle 17 on Product Info Card.

Computers Music MIDI Interested?

Order the 60 page CMC product buyers guide, a sample copy of "CMC MINUTES" magazine, and CMC membership details. Send $3.00 to cover postage and handling.

CMC

Computer Musicians Cooperative
3010 N. Sterling Ave, Peoria, Il 61604
1-800-342-5246 IL 309-685-4843

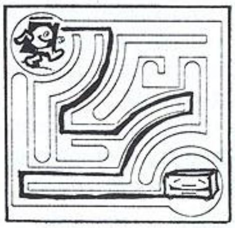
ADVERTISERS' INDEX TO FREE MATERIALS

Circle No.	Advertiser	Page
	Apple Computer	25-28
17	Assoc. Independent Micro Dealers	45
18	C & C Software	45
15	FCIC	45
21	Midwest Software	49
16	NPS	43
13	Random House	7
19	Scholastic/Bank Street Writer	CVR III
20	Scholastic/Talking Text Writer	CVR IV
11	Springboard	CVR II

ANSWERS TO POSTER WORKSHEETS

Primary #1: The pictures should be labeled, from left to right: video disc, floppy disk, hard disk.

Primary #2: Here is the completed maze:



Primary #3: The chart should be completed as follows: paper tape — 1900s, Mark I; magnetic tape reel — 1950s, UNIVAC; cassette tape — 1950s, Atari; hard disk —1960s, IBM System 36 (most large-capacity computers); floppy disk —1970s, most personal computers (Apple II, IBM PC, Commodore 64); laser videodisc — 1980s, personal computers (Apple II, etc).

(Other answers are possible; drawings will vary.)

Primary #4: Here is the riddle: Why are floppy disks good collectors? Because they like to SAVE things.

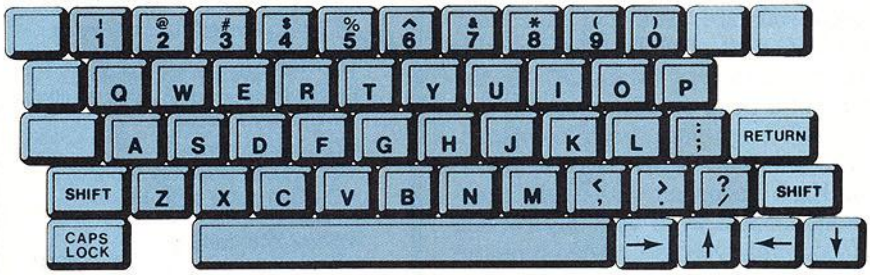
EARLY CHILDHOOD

FIRST STEPS

COMPUTER ACTIVITIES FOR PRIMARY GRADES

Magic Function Keys

If your students can recognize the letters and numbers on the computer keyboard, they have probably discovered that not every key *has* a letter or number. Some of the keys have words written on them; others have symbols, such as arrows. Learning about these special function keys and how to use them gives children a true sense of computer mastery.



Teach children about these special keys and the "magical" computer functions they perform.

Through the on-line and off-line activities in this month's column, children will be introduced to these special function keys and the different computer jobs, or "magic," they perform. These keys include the arrow, RETURN/ENTER, CAPS LOCK and SHIFT keys.

GENERAL INTRODUCTION

Turn on the computer and monitor and gather the children around them. Explain that they are about to meet some magic function keys that help the computer do special jobs when they are touched. First, however, they must know how the cursor on their computer works.

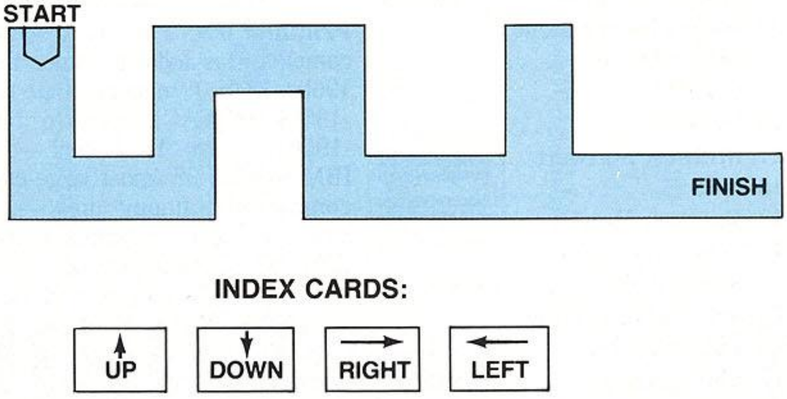
Introduce the cursor. Say, "A blinking cursor is a signal that the computer is ready for us to use. Maybe it wants us to type letters or to touch a magic function key. Do you want to see a cursor? Here it is on the screen *(point).*"

Some cursors are square, some are rectangular, and some look like a thick line. Familiarize the children with the cursor on their computer.

Then ask the children to look for the magic (special) function keys on the keyboard. Ask them to locate the SHIFT, CAPS LOCK, RETURN or ENTER, and arrow keys. Ask each child to touch each key while you say its name.

Preparation: Your classroom computer manual probably has a picture of the keyboard (usually found in the introductory pages). Using this picture or a similar one, make a print master of a letter and number keyboard like the one on your computer. Leave blank spaces or outlined spaces where the special function keys are located. Below the keyboard picture, draw and label the special function keys. Most computers have two SHIFT keys, four arrow keys, one CAPS LOCK key, and a RETURN or ENTER key. If your computer is different, make sure that the print master keyboard and keys match it. Leave plenty of room in the picture between the computer keyboard and the keys below so that the children can cut the keys out. Make a copy of this worksheet for each child.

Activity: Give each child a copy of the keyboard print master. Point out that the magic function keys are missing from the keyboard drawing and need to be placed in their proper spots. Ask the children to cut or tear out the keys at the bottom of the page (assist them if necessary) and paste them where they belong on the keyboard. Let them use the classroom computer as a reference.



Children take turns pretending to be a cursor in this classroom maze activity. Arrow key index cards help guide their way.

ARROW KEYS

The following exercises will allow children to explore the arrow keys in greater detail.

Introduction: Tell the children this story:

One day the cursor made a mistake and got lost on the monitor. It was very frightened! Finally, the cursor met a magician. The magician told the cursor that he would make some arrows that would help the cursor to move left, right, up, or down when it needed to find its way around the monitor.

Computer Activity: Gather the children around the classroom computer and point out the arrow keys. If you have a software program that requires the use of the arrow keys (a word processor is a good bet), run it and have the children take turns moving the cursor up, down, right, and left.

Off-line Activity: For each child, obtain four blank index cards. Label each card in a set with a different arrow direction: "up," "down," "left," or "right." Also mark each card with an arrow pointing in the direction written on the card. Use masking tape to make a maze on the floor of your classroom (see illustration, bottom left). Be sure to make the path wide enough for a child to walk in, and be sure to label the START and FINISH points. Let each child have a turn pretending to be a cursor. Tell the child to walk through the maze with the arrow cards. Each time the child changes direction to stay within the maze, he or she should hold up the corresponding arrow card. Seat students behind the child who is walking the maze and have them "follow" the movements of the human cursor by holding up their arrow cards, too. (Students must sit behind the cursor so that their directionality is the same as the cursor's.)

RETURN/ENTER KEY

Look carefully at your computer. Does it have a RETURN key or does it have an ENTER key? I will use the word RETURN in the following activities. If your computer has an ENTER key instead, be sure and substitute ENTER for RETURN throughout.

Introduction: Tell the children this story:

One day the computer told the magician that it had a hard time knowing when the children wanted it to go ahead and do what they had typed. The computer needed a magic function key that always meant, "I'm finished with my message, now it's your turn." The magician invented the RETURN key. The computer was so happy because now it had a way of knowing when it was time to do something.

Computer Activity: Show the children the RETURN key on your computer keyboard. Run any software that requires the use of the RETURN key, and have children take turns pressing it to see how the computer responds.

Off-line Activity: Hand out crayons and drawing paper, and tell the children to draw a picture of what happens in the computer's brain when the RETURN key is touched. The pictures will vary with each child's imagination. However, make sure that each child draws a RETURN key somewhere on the paper. Help label the key if the child cannot yet write letters. Some of the children may want to explain their drawings.

SHIFT KEYS

The activities in this section will first show how the SHIFT keys are used to type symbols that appear on the top row of the keyboard. Final activities show how the SHIFT keys are used to make uppercase letters. (The symbols on the number keys vary with each keyboard. The chart on this page indicates the symbols found on most computers in early childhood and kindergarten classrooms.)

Show the children the shift keys on your keyboard before beginning the following activities.

Introducing the Top Row of the Keyboard: Tell the children this story:

The magician tells us that if you drop something, it will always fall to the ground. That's why when you touch a key with two marks on it, you get what's on the bottom. How do you get the top mark? You get it by using the magic SHIFT key. When you touch the SHIFT key and the number 4, for example, you get a dollar sign instead of a number 4.

Computer Activity: Allow the children to practice typing numbers and symbols. To reinforce proper keyboarding technique, tell them: "Remember to hold the right SHIFT key down with the right pinky while you type with your left hand. When you type with your right hand, hold the left SHIFT down with the left pinky." Take as much time as necessary on this exercise for children to master the necessary coordination for using the shift key.

Off-line Activity: Make a print master of the symbols and numbers found on your classroom keyboard. Put the symbols on the top half of the paper and the numbers on the bottom half. Give one copy of the print master to each child. Tell the children to match the lower and upper sections of the paper by drawing a line from the number to the symbol that is above it on the computer keyboard. Let the children refer to the keyboard as needed.

SYMBOLS ON THE NUMBER KEYS

	1	2	3	4	5	6	7	8	9	0
Apple II +	!	"	#	$	%	&	'	(	)	
Apple IIe, IIc	!	@	#	$	%	^	&	*	(	)
IBM-PC	!	@	#	$	%	^	&	*	(	)
TRS-80	!	"	#	$	%	&	'	(	)	
Commodore 64	!	"	#	$	%	&	'	(	)	

Different classroom computers have different symbols on their top row number keys.

Introducing Uppercase Letters: If the children are not yet familiar with upper- and lowercase letters, now is the time to introduce them. Explain that each letter can be written in two ways, and show examples. Also explain that uppercase letters are used at the beginning of first and last names.

Computer Activity: Gather the children around the computer. Run a word processing program or any other program that will allow you to type upper- and lowercase letters. Show the children what happens when you press SHIFT while typing a letter. Type the letter again without pressing SHIFT. Have the children take turns typing a letter in upper- and lowercase.

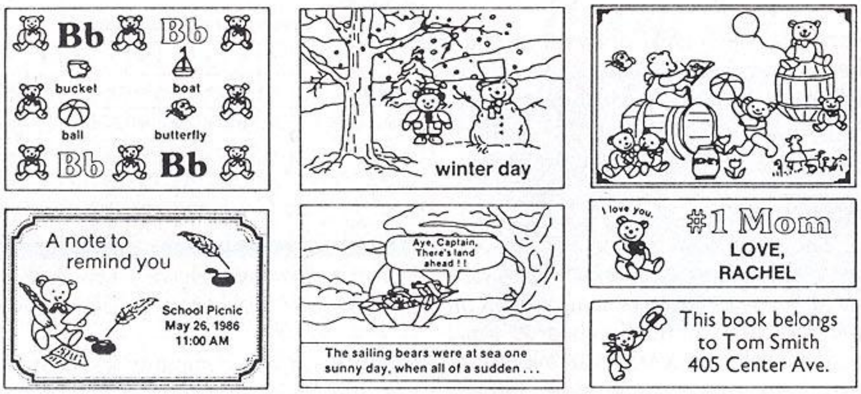
Next show them how to use the CAPS LOCK key to type only uppercase letters, and how to release it when they want to go back to lowercase. Have them practice typing a series of letters, first using the CAPS LOCK key and then releasing it.

Off-line Activity: Write some upper- and lowercase letters on the board, and have the children copy these letters onto their own piece of paper. Then ask them to circle the letters that could only have been made on the computer by holding down the SHIFT or CAPS LOCK key. They should circle all the uppercase letters on their paper. ■

Trisha Ainsa is director of the "Computer Literacy in Children" Title VII project at the University of Texas at El Paso.

SOFTWARE SHOWCASE

SOFTWARE RECOMMENDED FOR TEACHERS, BY TEACHERS



Children can create all kinds of Teddy-Bear related art with the help of the Teddy Bear-rels of Fun *program. Above are seven examples.*

TEDDY BEAR-RELS OF FUN

Computer: Commodore 64, Apple II series
Topic: Graphics, language arts
Grade Level: 3–7

Students become Teddy Bear artists with this exploratory graphics program. It lets them create whimsical Teddy Bear scenes by selecting and arranging bear-related pictures and designs from a collection of stock art.

The program consists of two separate disks — an Art Shop disk and a Library disk. Each disk provides pieces of the "pre-fab" art. Using these disks, students are asked first to pick from a choice of backgrounds (such as a beach, lake, or picnic). Then they are asked to select a number of designs and pictures to fill in the background. These pieces of art are called "stick-ons" because children can move and place them on the screen using simple keystrokes. Stick-ons include all sizes of bears; clothes for the bears; outdoor props, such as a balloon and a beach umbrella; indoor props, such as a rug and a chair; and more. Students may use the word processing capabilities of the program to write their own captions and place them inside "stick-on" cartoon ballons or segmented blocks. Children may also title their work (selecting type from a variety of fonts), put a border around it, and print it out.

The documentation for this program is excellent. The user's guide reviews every program option and provides a quick reference guide to all available stick-on graphics. In addition, there is an activities booklet that provides an exhaustive list of uses for this program — uses for both inside and outside of school.

The design of the program is good. It is easy to understand and offers excellent use of graphics and color. A complete picture can be constructed in a short period of time, which is good. One really nice feature is the Electronic Show, which lets the user create a series of pictures on a data disk and then display them automatically, giving a moving pictures effect (albeit a rather limited one).

The content of this program is, as with many of the graphics programs that appear on the market today, lots of fun, but of questionable educational value. My guess is that the best use of *Teddy Bear-rels of Fun* would be in a language arts setting to stimulate creative thinking and writing, or in an art class to be used as a tool to make interesting, catchy signs.

The vocabulary used in this program is limited, but I believe a little difficult for any child under third grade. The Teddy Bear theme is certainly popular with kids, although children in middle school and beyond will probably find it too childish.

Price: $39.95
Policy: Six-month warranty; $15 backup
Source: DLM,One DLM Park, Allen, Texas 75002

Evelyn Woldman, Adjunct Faculty
Lesley College, Cambridge, MA
(Circle 27 on Product Info Card.)

DISCOVERY AND EXPLORATION

Computer: Apple II series
Topic: History
Grade Level: 5–8

You are standing on a sandy shore next to a man who is holding a handmade steel sword. There is a beached dory behind you. A flag with a green cross flies from a wooden stick that has been stuck in the sand. From these clues you must try to determine the event you are observing and the date it occurred. (*The event is Christopher Columbus's claiming of the New World for Spain. The date is 1492.*)

That's the goal of *Discovery and Exploration,* one of four programs in the Amercian History Explorer Series. Each program in the series consists of six or seven historic events that students must identify from a variety of clues.

The authors of *Discovery and Exploration* surveyed the top 12 North American history textbooks in grades five through eight to ensure that the topics they covered in this program were germane to the greatest number of students. Topics are: Columbus's voyage of 1492, LaSalle's Mississippi trip, the founding of Jamestown and Philadelphia, the pilgrims' first Thanksgiving, and the founding of Quebec.

As the program takes students to each historic scene, children use one- or two-word commands to examine objects and uncover clues about the scene's event and date. A reference sheet lists commands that the program will understand. For example, it will respond to the following: "Go North," "Examine Flag," "Read Diary," and "Listen." Sometimes persons involved in the event can provide clues. For example, if players type "Listen/Beach" when they are placed on the scene where Christopher Columbus is landing on the beach, they'll "hear" (a quotation appears on the screen) him claim the land for Spain.

Once players think they can identify the event and date, they press ESCAPE and enter their answers. They must also identify the significant clues that led to this conclusion.

Discovery and Exploration has two levels: beginning and advanced. In the beginning level, students list the event, date of event, and the clues that led them to their decision. In the advanced level, they complete the beginning level objectives and also answer and select the significant clues for three additional questions related to the event. These questions require deductive reasoning and possibly some outside research.

A classroom management system allows teachers to monitor records for up to 50 students. A STOP command lets students quit working and save their current progress.

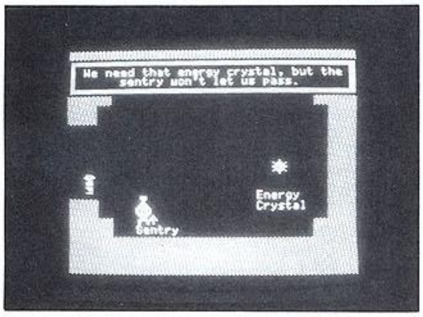
Playing *Discovery and Exploration* is an exciting way to bring a real sense of exploration to history — something that simply memorizing history facts cannot do. This program will make a motivational and participatory difference for students. Warning: Some students will be turned into history buffs by this stimulating simulation. They'll ask for the other programs in the series!

Price: $39.95

Policy: Backup included; 30-day preview

Source: Mindscape Inc., 3444 Dundee Road, Northbrook, IL 60062; 312/480-7667

David Fiday, Media Director
Laraway District 70-C, Joliet IL
(Circle 26 on Product Info Card.)



```
We need that energy crystal, but the
sentry won't let us pass.
```

Sneak past sentries in Robot Odyssey*!*

ROBOT ODYSSEY 1

Computer: Apple II series, IBM PC/PCjr, Tandy 1000, Compaq

Topic: Science, computer programming, robotics

Grade Level: 7 and up

Imagine falling out of bed one

(continued)

Circle 21 on Product Info Card.

McGuffy's Grader

IS HERE!

GUARANTEED TO DO EVERYTHING YOU HAVE EVER WANTED IN A GRADEBOOK PROGRAM. * SPREADSHEET OF ALL GRADES BY ASSIGNMENT * WEIGHTING * TEACHER DESIGNED PROGRESS NOTES * BANK OF 50 COMMENTS * STATISTICS * SEMESTER AVERAGING AND FINAL GRADE * ROSTER DUPLICATION * ACCEPTS POINTS, PERCENTS, LETTER GRADES OR YOUR OWN SYMBOLS * MANY, MANY MORE FEATURES.

– SUITABLE FOR ALL LEVELS OF EDUCATION–
AN EPIC PROGRAM FOR AN EPIC TASK

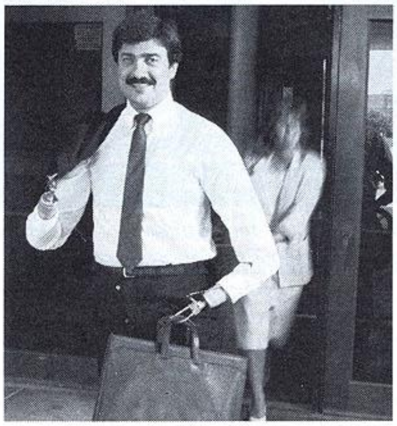
FOR APPLE IIE, IIC (80 COLUMNS), COMMODORE 64,
COMMODORE 128, IBM (COMING SOON)

FREE TRIAL IN YOUR SCHOOL FOR 30 DAYS
ONLY $49.50 PLUS $2.00 SHIPPING

CALL TODAY, 1-800-422-0095

MICHIGAN AND ORDERS AFTER 5:00 P.M., (313) 477–0897
VISA/MASTERCARD

MIDWEST SOFTWARE, BOX 214, FARMINGTON, MI 48024



PUT ABILITY IN DISABILITY

People with disabilities come to Easter Seals looking for a chance, not charity. Share in their work and aspirations.

Support Easter Seals®

HAVE YOU SEEN THIS CHILD?

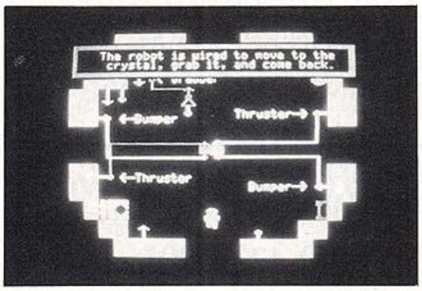
Ann Gotlib

Born: May 5, 1971
Missing From: Louisville, KY
Missing Since: June 1, 1983
Eyes: Grey
Hair: Red

If you have information on the whereabouts of Ann, or if you suspect another child of being a victim of abduction, please contact the National Center for Missing & Exploited Children, 1835 K St., N.W., Suite 700, Washington, D.C., 20006; 800/843-5678 (hotline), 800/826-7653 (for the deaf), 202/634-9836 (in D.C.). All information will be handled in strict confidence.

(continued from page 49)

morning and, instead of finding yourself on the floor, finding yourself in an underground city of robots. The only way out is by making maps and by programming three friendly robots to perform tasks for you like opening doors, sneaking past sentries, and picking up keys. Along your way, you confront mine fields, magnetic storms, secret rooms, and more.


The robot is wired to move to the crystal, grab it, and come back.

Tour a robot's insides in Robot Odyssey.

Robot Odyssey 1 is the adventure simulation that you are playing, and Robotropolis is the name of the land that you have entered. As a user, you will progress (if you are lucky) through The Sewer, The Subway, The Town, The Master Control Center, and The Skyway. Each level is progressively more difficult than the one that precedes it. To obtain help from your robots, you must know what you want them to do, form hypotheses on how to make them do it, build models, test theories, and refine the theories you have made until they work. In the process, you build logic and problem-solving skills as well as learn about robot circuitry and programming.

Robot Odyssey 1 is a great educational tool that could keep many students on the edge of their seats for hours. Unfortunately, finding the amount of time needed to successfully play it in a classroom environment is next to impossible. Patience, a good attention span, a willingness to use the supplied 65-page manual, and at least two hours of playing time are all needed to make it through even the simplest level of the game.

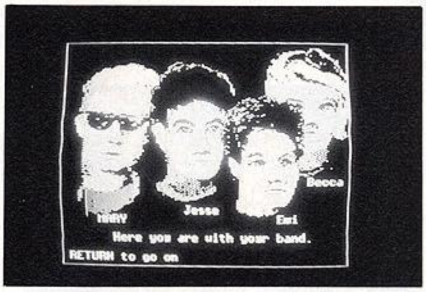
I highly recommend *Robot Odyssey 1* to any junior high level or above after-school computer club. I also recommend it to parents in the market for educational software for the home. There are few circumstances, however, in which I would introduce this software into a regular classroom or computer lab environment. The time commitment necessary to play it, I am afraid, is just a bit too difficult for me to justify.

Price: $49.95
Policy: 30-day money back guarantee; 90-day warranty on the diskette. $15 for a backup. Afterward, $10 for a replacement.
Source: The Learning Company, 545 Middlefield Rd, Suite 170, Menlo Park CA 94025; 800/852-2255; 800/852-2256 (California)

Craig Dickinson, Teacher
Asa Adams School, Orono, ME
(Circle 25 on the Product Info Card.)

SOUND SOLUTIONS

Computer: Apple II series;
Topic: Math, problem solving
Grade Level: 6–8


Here you are with your band.
RETURN to go on

Kids take their rock band out of the garage and into the big time in Sound Solutions.

Sound Solutions is a problem solving simulation in which a student or (preferably) a group of students are responsible for the progress of a band of musicians — from garage practice anonymity to super stardom. In order for the band to achieve super star status, students must solve a broad range of realistic managerial problems (three disks worth!). These problems range from planning travel routes and deciding which musical cuts should go on an album, to calculating profit from album sales and deciding how much to spend for the production of a music video. The problems exercise skills in the area of mathematical computation, as well as in visual acuity, perception, and pattern recognition.

At the beginning of each of the three program disks, one student is allowed to be the manager of the group, and can choose any one of four band members he or she would like to "be" (lead singer, drummer, and so on). This student will be the one to enter answers into the computer — starting with the name the band has chosen for itself. As students solve problem after problem correctly, the band's popularity and revenues grow.

Students will appreciate this program's snappy graphics and its use of a futuristic "videophone" to introduce each new problem. The program also offers such useful options as a calculator, problem reviewing, help screens, and tips for finding the solution. With the use of a separate management disk, the teacher may control difficulty, the review feature, sound and music, and several other functions. Progress for 30 students can be recorded on the disk.

The excellent documentation clearly describes each activity and defines any new vocabulary. It also includes worksheets that help students focus on problem solving by asking "what-if" questions that extend each problem beyond the present situation.

Overall, *Sound Solutions* is a great way to encourage the active participation of all students in the realm of problem solving. It is based on a sixth-grade skill level, but high ability fifth graders and hard-to-motivate seventh and eighth graders will benefit from it as well. The ideas and situations presented in the program are the stuff of fantasy for today's young music "freaks"!

Sound Solutions is just one program in a series of intriguing problem solving software called Mathematics Unlimited Problem Solving.

Price: $99 for one set; $150 for a "lab pack" set of five
Policy: Backup included; 30-day preview with purchase order
Source: Holt, Rinehart and Winston Software; 385 Madison Avenue, Sixth Floor, New York, NY 10017, 212/872-3900

David Fiday, Media Director
Laraway District 70-C, Joliet, IL
(Circle 28 on Product Info Card.) ■

CLASSIFIED

CLASSIFIED: Rates $15.95 per line with a 4-line minimum. Classified display is available at $170 per inch (one inch minimum, fractions accepted). FREQUENCY DISCOUNTS are also available. Ad copy and payment are due 35 days prior to the month you wish your ad to appear (i.e. the May/June closing date is March 25). Check or money order should be made out to ELECTRONIC LEARNING, Visa/MC accepted. All text for classified advertising is accepted at the discretion of the publisher. Services and products cannot be tested; listings do not imply endorsement by Scholastic. Send to: **CLASSIFIED EL/TC,** SCHOLASTIC Inc., 730 Broadway, New York, NY 10003. Or call 212-505-3501.

SOFTWARE

WOMEN OF INFLUENCE IN AMERICA 1800–1900
GAME & STORIES SHOW HOW 20 GREAT WOMEN
LEAD THE STRUGGLE FOR EQUAL RIGHTS.
EASY TO USE, FUN TO PLAY. $69.00/back-up $15.
Apple IIe/c & IBM compatibles.
WINTERGREEN SOFTWARE
PO Box 1229, Madison, WI 53701, 608-256-1747
Free trial with purchase order — call collect

HUMAN SEXUALITY

New Day Software presents:

Asking Around, Checking it Out

A personal guide for middle school students who want to know more about the physical and emotional changes of puberty. Reassuring, straightforward and fun to use!

- Designed for use on Apple II's
- Vinyl binder holds a 2-disk program featuring color graphics and a 37-page illustrated user's manual
- Teacher's Guide/prof. support
- $45 plus $5 postage & handling

NEW DAY SOFTWARE
414 Union Street, Sch'dy NY 12305
(518) 374-5353
A Division of Planned Parenthood
of Schenectady & Affiliated Counties

AppleWorks gets down to school business with **SchoolWorks!**

Over 100 pre-programmed - and copyable - spreadsheet, database and word processing templates for managing gradebooks, attendance, taking book inventories, recording book reports, writing tests, printing progress or deficiency reports, forecasting department expenditures and other applications. Why work harder when you can work smarter? Satisfaction guaranteed. Available as three separate modules (SchoolWorks: Teacher, SchoolWorks: Office *and* SchoolWorks: Athletic Director) *for $55.00 each, $99.00 for two or buy all three for $125.00!*

K-12 MicroMedia Publishing,
Dept. EL, 6 Arrow Rd.
Ramsey, NJ 07446
(800-922-0401)

APPLE PUBLIC DOMAIN SOFTWARE
Cat. $2.00 or $3.00 Cat. & Demo Disk.
Free disk when you place order.
B & L CONSULTANTS & SALES
Box 461, Wabash, IN 46992 (219) 563-7650
IBM PUBLIC DOMAIN CAT $1.00 VISA & MC

SOLARSIM is a 3D Solar System Simulation. View constellations, planets, comets, etc., from any point on Earth or in space at any time/date. 800 stars, 250 planetoids—add more. IBM/TIPC/Z-100 (ST/AMIGA soon) **Send for ED SW CAT.**
INTERSTEL Box 57825, Webster, TX 77598.
MC/VI orders (800) 662-4070 or (713) 333-3909.

30% OFF ALL SOFTWARE 100 Disks $29.00
NEW CONVENIENCE SOFTWARE FOR TEACHERS.
Best prices on APPLE Panasonic 1080i $215.00
IBM Compatibles w/ monitor as low as $700.00
SY DRAFT Inc. (800) 321-2695

U.S. ROCKETS offers a complete selection of ROCKET KITS, MOTORS, LITERATURE and SOFTWARE. Catalog $2.00 cash. U.S. ROCKETS, Box 1242, Claremont, CA 91711, (714) 620-1733.

B+ C *Determine* 95
Grades The
A *Easy Way!* D

Use the ***J & S Grade Book,*** *(formerly the Apple Grade Book)* ***New ProDos version.***

This ***new*** *version of the* ***J & S Grade Book,*** *will print grade book pages, progress reports, record incompletes, and average and weight all grades. The built in editor permits easy modification of all data.*

The program records and reads class data twice as fast as the original version. It will record up to 55 grades per student and 50 students per class for unlimited classes. Demo $5.00

For Apple IIe/IIc. Only ***$49.50.*** *(includes a backup).* ***J & S Software***
14 Vanderventer Avenue (516) 944-9304
Port Washington, N.Y. 11050

SeeLogo in your classroom - **Free!!**

This exciting new turtle graphics learning environment develops critical thinking skills just like Logo, yet is far easier to learn — and teach. Kids build pictures and procedures simultaneously. Syntax errors are more clearly explained. Text can be added to graphics anywhere on-screen. And, while most SeeLogo commands are identical to those of other versions, several new ones can help make certain concepts more accessible.

The result? A friendlier Logo that's the ideal introduction to the world of powerful ideas. See for yourself. Try SeeLogo free in your classroom for 30 days. Then, to keep it, send a check or P.O. for $59.95.

K-12 MicroMedia Publishing, Dept. EL,
6 Arrow Rd.,
Ramsey, NJ 07446
(800-922-0401)

EDUCATIONAL SOFTWARE
APPLE / ATARI / COMMODORE / IBM
MINIMUM 30% DISCOUNT
Request our FREE Educational Catalog.
SOFTWARE SHUTTLE
PO Box 316, Dayton, OH, 45409-0316
(513) 293-2594

QUIZ BOX lets you create your own library of quizzes. Multiple formats. flashcard and exam modes. Automatic scoring. Print options. For IBM and compatibles. $39.95. Guaranteed. VISA/MC.
Korso Enterprises Dept. A, PO Box 92696, Milwaukee, WI 53202.

BODCAT HUMAN BODY SIMULATION $199.00
Learn anatomy and physiology.
Control the body's muscles and glands for movement and homostatis. Disassemble the body. Computerized glossary. Edit. Lessons and exams. Student tracking. for APPLE II, from **C.A.T.** (619) 942-5666
BOX 4093, CARLSBAD, CA 92008

MENTAL MATH – Learn and practice mental computation and estimation techniques using interactive program on 64K APPLE II.
GREAT FOR ENRICHMENT AND MATH CLUBS
$35 ppd, $5 extra copies. E WEES SOFTWARE
3301 S. Prince, Clovis NM 88101. P.O. ok.

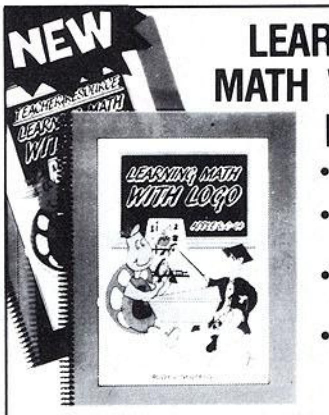
ATTENTION T.I. 99/4A OWNERS

- Over 1500 Accessories

THE WORLD'S LARGEST COMPUTER ASSISTANCE GROUP

Now serving over 35,000 members worldwide with the best in technical assistance, service, and products for the Texas Instrument 99/4A

To become a member and receive newsletters, catalog, technical assistance and membership package, send $10.00 for a ONE Year Membership to: 99/4A National Assist Group
National Headquarters
P.O. Box 290812
Ft. Lauderdale, Florida 33329
Attention Membership Division
For Information Call (305) 583-0467



LEARNING MATH WITH LOGO

- Grades 4-7 Mathematics
- Guided Discovery Approach
- For Terrapin and Apple Logo
- Teacher Resource Text Available

"Everything the teacher needs is there. The students' text is complete in itself, well-illustrated and attractively presenting all that the learners need to know to master the basic concepts and go on to further challenges. October 1986, Computers in Education

"An excellent mathematics resource with an emphasis on exploring and discovering." September 1986, Logo Exchange.

OPTION 1
1 Student Text $24.95
1 **FREE** Teacher Resource

OPTION 2
15 or more
Student Texts @ $14.95 each
1 **FREE** Teacher Resource

All prices U.S. currency. Shipping and Handling $2.00 U.S.
SEND ORDER AND MAKE CHEQUE PAYABLE TO: LOGO PUBLICATIONS
7 Conifer Cres., London, On., Canada N6K 2V3 1-519-657-9334

Program Listing for The Mystery of Megan Watt

BY JOANNE DAVIS

(Continued from page 20.)

The program procedures used for the computer's role in the play, *The Mystery of Megan Watt*, page 16, were designed for use with Terrapin Logo. Load Terrapin Logo into your computer. READ "MUSIC from your Utilities Disk. Then type in the procedures below. Save them on a blank, formatted diskette under the file name MYSTERY.

```
TO TEASER
   PLAY [10 7 12 10 7] [60 40 30 90 90]
END

TO FUNNY
   PLAY [8 8 8 3 5 1 R 13] [30 30 30 60 60
60 60 30]
END

TO MYSTERY
   FRAME1 FRAME1A FRAME2 FRAME3
   FRAME4 FRAME5 FRAME6
   FRAME7 FRAME8 FRAME9
   FRAME10 FRAME11 FRAME12
END

TO FRAME1
   CLEARTEXT
   CURSOR 5 10
   PR [THE MYSTERY OF MEGAN WATT]
   CURSOR 10 12
   PR [BY JOHN HEYWORTH]
   CURSOR 0 23
   PR RC
END

TO FRAME2
   CLEARTEXT
   NOISE
   CURSOR 10 10
   PR [IT DOES NOT COMPUTE.]
   CURSOR 0 23
   IF RC? STOP
   REPEAT 15 [ ]
   FRAME2
END
TO FRAME1A
   CLEARTEXT
   CURSOR 13 10
   PR [CPU AT WORK.]
   CURSOR 0 23
   PR RC
END
TO BUZZ
   REPEAT 20 [.DEPOSIT 49200 0]
END
TO NOISE
   BUZZ PRINT1 CHAR 7
END

TO FRAME3
   CLEARTEXT
   NOISE REPEAT 15 [BUZZ]
   CURSOR 12 10
   PR [IT'S TEATIME.]
   CURSOR 2 12
   PR [AREN'T WE GOING TO TAKE A
BREAK NOW?]
   CURSOR 0 23
   CLEARINPUT
   PR RC
   CLEARTEXT
END
TO FRAME4
   CURSOR 6 6
   PR [SUDDENLY I FEEL VERY
SLEEPY. . .]
   CURSOR 10 10
   PR [YAWN - YAWN - YAWN.]
   PR []
   CURSOR 1 12
  PR [ZZZZZZZZZZZZZZZZZ
ZZZZZZZZZZZZZZZZZ]
   LULL1 IF RC? STOP
   FRAME4
END

TO FRAME5
   CLEARINPUT
   CLEARTEXT
   PLAY [13+] [200]
   CURSOR 5 10
   PR [YES? YES? CAN I HELP YOU?]
   CURSOR 0 23
   PR RC
   END

TO FRAME6
   CLEARTEXT
   CURSOR 10 10
   PR [???? YOU GOT ME ????]
   CURSOR 1 12
   PR [I ONLY KNOW WHAT YOU TELL
ME, REMEMBER?]
   CURSOR 0 23
   PR RC
END

TO LULL1
   .GCOLL
   PLAY [5 5 8 5 5 8 5 8 13 12 10 10 8] [60
60 240 60 60 240 60 60 120 120 120 120 180]
   IF RC? STOP
   PLAY [3 5 6 3 3 5 6 3 6 12 10 8 12 13]
[60 60 120 240 120 120 180 120 120 60 120
240 300 240]
   IF RC? STOP
END
TO FRAME7
   CLEARTEXT
   CURSOR 3 10
   PR [PLEASE! I NEED MY BEAUTY
REST!]
   CURSOR 1 12
  PR [ZZZZZZZZZZZZZZZZZZZZZZZZZZZZ
ZZZZZZ. . .]
   LULL1 CLEARTEXT
   PR RC
END
TO FRAME8
   MAKE "C 1
   HT
   REPEAT 15 [PRINT1 CHAR 7 MAKE "C
:C + 1 BG :C IF :C › 5 THEN MAKE "C 1]
   TEXTSCREEN
   CLEARTEXT
   CURSOR 10 10
   PR [NOT SO FAST, BATMAN.]
   CURSOR 0 23
   PR RC
END

TO FRAME9
   CLEARTEXT
   CURSOR 5 10
   PR [IT WAS I WHO KILLED MEGAN
WATT.]
   CURSOR 0 23
   PR RC
END

TO FRAME10
   CLEARTEXT
   CURSOR 2 10
  PR [WITH 10,000 VOLTS OF MY
ELECTRICITY.]
   CURSOR 0 23
   PR RC
END

TO FRAME11
   CLEARTEXT
   CURSOR 1 10
   PR [YOU CALL THAT A JOKE!]
   CURSOR 2 12
   PR [IT WAS IN TERRIBLE TASTE. . .]
   CURSOR 7 14
   PR [. . .AND, IT WASN'T EVEN
FUNNY.]
   CURSOR 0 23
   PR RC
END

TO TEASE
   REPEAT 3 [TEASER]
END

TO FRAME12
   CLEARTEXT
   CURSOR 13 10
   PR [THE END]
   TEASE
   CURSOR 0 23
END
```

Announcing the only word processor your school will ever need.

BANK STREET WRITER III.

Five years ago, the Bank Street College of Education and Scholastic jointly published a word processor that revolutionized the way teachers taught writing.

The Bank Street Writer quickly became the #1 word processor for classrooms.

Now, for a new generation of 128K computers, with their increased potential, the same team announces a new generation of software:

The Scholastic Bank Street Writer III
Actually three programs in one to meet all your needs!

I. *The Scholastic Bank Street Writer III* is a powerful word processor with an integrated spelling checker and thesaurus.

The spelling checker's 60,000 word dictionary highlights and helps correct errors, and the fully-integrated thesaurus enriches vocabularies.

II. A separate 20-column program disk* provides a BIG TYPE option that enables even second-graders to get actively involved in word processing with *The Scholastic Bank Street Writer III.*

III. Here is software that is so new...so powerful that it's the *first* word processor that deserves to be called a *writing* processor.

Dramatic new features such as "frozen prompts,"* which permit teachers to add on-screen lessons and activities that students cannot erase, chain printing, and a fully developed writing workshop in the Scholastic-only Manual make *The Scholastic Bank Street Writer III* an ideal tool for teaching the entire writing process: pre-writing...writing...editing and revising.

Find out more. And find out how you can try this remarkable and totally new teaching tool with your own students for a full month's FREE EVALUATION.

*Available in Apple version only.

THE BANK STREET writer™
III
NOW WITH:
• Integrated Spelling Checker
• Integrated Thesaurus
• Additional Classroom Features
Scholastic
The Most Trusted Name in Learning®
THE BANK STREET writer
THE BANK STREET WRITER™
Developed by
© 1984 Bank Street College of Education, Franklin E. Smith, and Intentional Educations, Inc.
Apple //e or //c, DOS 3.3 © 1980–81, Apple Computer, Inc.
Published by
SCHOLASTIC INC.

New Exclusively from Scholastic for 1986

Circle 19 on Product Info Card.

Already own a word processor? Trade-in/Trade-up to *Bank Street Writer III* with this money saving plan! Send for details.

☐ **Yes,** send me the details!
I want to know all about *The Scholastic Bank Street Writer III,* and how I can try it for 30 days...free! Include details on your Trade-in/Trade-up Plan too.

My name____________________

School____________________

School Address____________________

City/State/Zip____________________

Mail to: Scholastic Software
P.O. Box 7502 2931 E. McCarty Street
Jefferson City, MO 65102

703 TC

This offer valid in U.S. only. Canadian Residents please write Scholastic Publications, 123 Newkirk Rd., Richmond Hill, Ont. L4C3G5

Scholastic Software™
The Most Trusted Name in Learning

"My computer just talked to me!"

MY NAME IS JOEY.
WILL YOU PLAY WITH ME?

Announcing a breakthrough program for helping students learn to read and write: Scholastic's new *Talking Text Writer!*

There is now a brand-new way your Apple computer can help your students learn to read and write.

It's called *Talking Text Writer,* and what makes it an important development for education is that it marries word processing with speech!

Your students type in their own words, their own stories, their own experiences...

...and *Talking Text Writer* says it back to them, aloud!

More than five years of research has proven that *Talking Text Writer* is a dramatically effective teaching tool for improving reading and writing skills, both among new learners and among remedial learners.

With this program, students not only see their words, their stories, their ideas on the computer screen, as with any word processor.

They also hear what they have created, one letter at a time, one word at a time, or only when they want a whole story repeated back to them. This aural component–immediate feedback and lots of fun, too–is a key factor in the learning-to-read process as well as a powerful stimulus to writing.

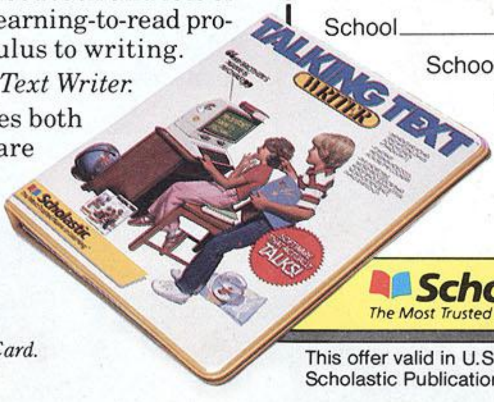
Scholastic's *Talking Text Writer.*

A single package that includes both the hardware and the software you need to experience this learning breakthrough in your own classroom.

- An amazing word processor that enables your Apple computer to speak back anything and everything your students type into it.
- Specially-created features for young learners, including large type (20-column) display option, a rainbow of color choices and large type print-out capability.
- A speech synthesizer.*
- A User's Handbook that provides scores of classroom-tested suggestions for adapting *Talking Text Writer* to whatever reading program you are currently using... and to each student's individual needs.

Find out more about this innovative development, and what it can mean to your reading program. Just clip the coupon.

Circle 20 on Product Info Card.



Yes! Send me more information about Scholastic's breakthrough new program, *Talking Text Writer!*

Name____________________

School____________________

School Address____________________

City____________________

State/Zip____________________

Mail to: Scholastic Software
P.O. Box 7501
2931 East McCarty Street
Jefferson City, MO 65102

Scholastic Software™
The Most Trusted Name in Learning

703 TC

This offer valid in U.S. only. Canadian residents please write Scholastic Publications, 123 Newkirk Road, Richmond Hill, Ont. L4C 3G5

---

*Echo + for the Apple IIe and Cricket for the Apple IIc from Street Electronics.

No pages are missing from this document

If you would like to contribute missing pages or issues,
please contact me at:
MikeEBean@Hotmail.com

Thank you!
Michael Bean